

# Final Environmental Impact Statement/Report

## Lincoln Bypass Placer County, State Route 65

KP R19.3/R38.3

PM R12.0/R23.8

May 2006  
May 2006

**Construct four lanes on new right of way  
In Placer County,  
South of Industrial Avenue to Riosa Rd.**

## **Final Environmental Impact Statement**

### **Final Environmental Impact Report**

*Submitted Pursuant to:*

National Environmental Policy Act, 42 U.S.C. 4332(2)(c)  
And the California Environmental Quality Act, Div. 13, Public Resources Code

*By the*

U.S. Department of Transportation, Federal Highway Administration  
&  
the State of California, Department of Transportation

Cooperating Agencies:

U.S. Army Corps of Engineers  
U.S. Fish and Wildlife Service

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Date Jody Jones, Director, District 3  
California Department of Transportation

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Date Gene K. Fong  
Division Administrator  
Federal Highway Administration

**The NEPA review period for this document closes on {date}. The following persons may be contacted for additional information concerning this document.**

John D. Webb, Chief  
Caltrans, District 3 Office of Environmental Services  
2389 Gateway Oaks Dr.  
Sacramento, CA 95833  
(916) 274-0588

Maiser Khaled  
Chief, District Operations North  
Federal Highway Administration  
650 Capital Mall, Suite 900  
Sacramento, CA 95814  
(916) 498-5020

**ABSTRACT:** The FHWA and Caltrans propose to construct a four-lane freeway around the city of Lincoln, in Placer County, from south of Industrial Blvd to north of Riosa Rd. The purpose of the project is to alleviate congestion and improve safety within the city of Lincoln and provide for inter-regional movement of goods and services. Seven alternatives were evaluated, including the "No Build" alternative. The D 13 North Modified is the preferred alternative. The estimated cost of this project is between \$210,000,000-240,000,000.

The D 13 North Modified alternative will affect vernal pool fairy shrimp and tadpole shrimp, Swainsons' hawk, valley elderberry longhorn beetle and numerous large oak trees, vernal pool habitat and agricultural land. The proposed preferred alternative will affect 8 residences and 234 acres of farmland and 13.6 acres of ACOE jurisdictional wetlands or waters of the U.S.

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### **S.1 Project Purpose & Need**

The California Department of Transportation (Caltrans) and Federal Highway Administration (FHWA) propose to construct a four-lane freeway around the City of Lincoln, in Placer County (see Figure i, ii and iii). The project begins 0.3 km (0.5 mi) south of Industrial Avenue and ends near Riosa Road. A map showing the alternatives is presented in Chapter 2 (See Figure 2-1). Seven alternatives were evaluated in the Draft Environmental Impact Statement/Report (EIS/R); the AAC2, A5C1 (AC alternatives), D1 and D13, D13 South Modified, D13 North Modified (D alternatives) and the "No Build" alternative. The last two alternatives, D13 South Modified and D13 North Modified, were developed in response to information gathered at the Public Open House held on September 22, 1999.

A number of additional alternatives were also evaluated, but withdrawn from consideration for various reasons. These are discussed at the end of Chapter 2.

Approval of this Final EIS/R and the subsequent Record of Decision (ROD) issued by the FHWA and Notice of Determination (NOD) issued by Caltrans would allow for the acquisition of right-of-way for the ultimate four-lane freeway and provide for approval and construction of freeway and interchange locations.

During the public circulation of the Draft EIS/R, an open house was held on December 18, 2001. Over 300 people attended and there were 176 comments received on the Draft EIS/R. These comments and responses can be found in Appendix K.

The purpose of the project is to relieve congestion and improve safety on existing State Route (SR) 65 in the vicinity of the City of Lincoln and provide for a regional traffic solution to accommodate projected traffic volumes for the year 2025. Traffic studies were completed with the 2025 design year in mind.

Continuing planned growth in south Placer County and the Sacramento Valley has resulted in the need for a new and improved SR 65 corridor, which would alleviate congestion in the City of Lincoln while providing for improved inter-regional traffic flow. The existing facility through Lincoln is a "Main Street" highway, which will not serve the ultimate transportation needs of the region. Due primarily to congestion, the collision rate in downtown Lincoln is higher than the Statewide average rate for this type of facility. SR 65 south of Lincoln and within downtown Lincoln currently exceeds available capacity.

The proposed project is partially funded and is programmed in the SACOG Metropolitan Transportation Plan (MTP) 2027 which was found to conform by the SACOG Board on March 16, 2006, and FHWA and FTA adopted the air quality conformity finding on April 20, 2006. The project is also included in the SACOG's financially constrained 2004-2006 MTIP, which was found to conform by FHWA and FTA on April 20, 2006. This proposed project's preferred alternative design, concept and scope are consistent with the above-mentioned documents, the 2004 STIP, and the proposed 2006 STIP.

In order for the project to be included in the MTIP, it must be in conformance with air quality standards and must meet certain criteria. This project has been analyzed and will not significantly change the air quality in the City of Lincoln.

## **S.2 Brief Description of Project**

The six build alternatives are of various lengths, ranging from 18.6 km to 20.6 km (11.6 to 12.8 miles). They are shown in Figure 2-1 and described in Chapter 2.

The project begins just south of Industrial Avenue (KP R19.3 [PM R12.0]) and ends near Riosa Road (KP R38.3 [PM 23.8]). All the "Build" alternatives begin at the same location and meet existing SR 65 at slightly different locations between Dowd Road and the Bear River near Riosa Road. All of the alternatives descriptions begin on the south end of the project and are described south to north.

Due to funding constraints, the proposed preferred alternative would be built in stages: The minimum project staging includes a four-lane expressway commencing just south of Industrial Avenue proceeding to the north to Nelson Lane. A partial interchange would be constructed at Industrial Avenue. North of Nelson Lane a two-lane facility would be constructed. At-grade intersections would be constructed at Nelson Lane, Wise Road and Riosa Roads for the first phase. As traffic congestion increases, additional lanes and interchanges would be constructed. The northbound roadbed will be constructed initially and operated as a two-lane conventional highway from Nelson Road to the tie in with existing SR 65, until future construction provides for the parallel roadbed. Right-of-way would be acquired for the entire project during the first phase.

Possible temporary construction activities that will occur include constructing a temporary detour road in the median of the existing freeway right of way at the beginning of the project near Industrial Avenue. The width of this road will vary from 0 m to 18 m (59 ft), with the average width being 11 m (36 ft), and will extend from PM 12.0 to PM 12.2 (near Industrial Avenue). The purpose of this temporary detour is to allow construction, while minimizing the impact on traffic. The temporary road construction

activities include excavation, placement of embankment, aggregate base, and asphalt concrete pavement. The detour road will be used for staging for a period of twelve to twenty four months. Temporary drainage features may be placed to accommodate detours. When the staging work is finished, this detour road will be removed.

### **S.2.1 Preferred Alternative D13 North Modified**

Caltrans and FHWA determined, and the U.S. Environmental Protection Agency concurred on July 9, 2003 and the U.S. Army Corps of Engineers concurred on August 8, 2003, that the D13 North Modified alternative is the least environmentally damaging practicable alternative (LEDPA). The impacts to vernal pools and wetlands are comparable for all the alternatives. However, the A5C1 and AAC2 alternatives impact higher quality vernal pools than the D alternatives. In addition, the AC alternatives have a much greater community impact than the D alternatives. During the ten years between concurrence on the “range of alternatives” and the present, growth in Lincoln has continued. Several developments have been approved or are already built within the AC alignment. A recent count of residences affected by the project shows that the A5C1 alternative impacts 461 residents and the AAC2 alternative impacts 469 residents. See Table ii for a comparison of the alternatives.

All of the alternatives except the D13 North Modified require acquisition of property that is under a Wetlands Conservation Easement in the Wetlands Reserve Program (known as the USDA Wetland Conservation Easement throughout this document).

The cumulative and indirect impacts of the project are similar for all the alternatives. As indicated by both the City and County’s general plans, it is apparent that the future land use of the study area has been established regardless of the location of the bypass. According to the comment letters received at the open house, the city planners and the residents of Lincoln are overwhelmingly in favor of the D13 alternatives and opposed to the AAC2 and A5C1 alternatives.

### **Project Description for the D13 North Modified Alternative**

The Draft EIS/R for the SR 65 Lincoln Bypass Project evaluated the ultimate project, which includes a four-lane freeway with a partial interchange at Industrial Avenue and interchanges at Nelson Lane, Wise Road and Riosa Road. There will be an overcrossing at Nicolaus Road and a cul-de-sac at Moore Road and Dowd Road, neither of which will have access to the freeway.

Due to funding constraints, the ultimate project cannot be built immediately. Initially, four lanes will be constructed from the beginning of the project near Industrial Avenue to just north of the proposed North Ingram Slough Bridge. From that point on to where the Bypass would re-join existing SR 65 near Sheridan, only two lanes will be constructed and an over crossing at Nicolaus Road and a frontage road for Dowd Road. Right of way for the ultimate four-lane freeway will be purchased during the first phase due to the rising costs of right-of-way. The first phase of the proposed project also includes construction of an at-grade intersection at Nelson Lane, Wise Road, and Riosa Road.

Several options were considered to avoid potential indirect/secondary impacts stemming from the intersection, and later, interchange at Wise Road, to nearby aquatic resources; specifically the Coon Creek watershed. A conservation easement in the Coon Creek watershed, equivalent to the approximate cost of constructing an over crossing structure at Wise Road, is included in the project to address these concerns.

In addition, a 32.4 ha (80 ac) floodplain easement is proposed for the northeast quadrant of the Wise Road intersection to collect floodwater. The floodplain easement will allow the construction of a shorter bridge and a lowered roadway profile, saving the cost of additional fill. The floodplain easement will also prevent any development from occurring in that area.

### S.3 Other Alternatives Considered

Fifteen distinct alternatives have been considered in addition to the “No Build” alternative. Of those 15, seven alternatives were evaluated in depth in the Draft EIS/R, including the “No Build,” AAC2, A5C1, D1, D13 and D13 South Modified and the D 13 North Modified. In compliance with federal, state and local environmental regulations, existing wetland areas and environmental impacts associated with these seven alternatives were studied in detail. The D 13 North Modified appeared best meet the purpose and need. The remaining nine alternatives were previously eliminated from further study in the Draft EIS/R for a variety of reasons. These rejected alternatives and reasons for elimination are shown in Table i.

**Table i Rejected Alternatives**

| ALTERNATIVE | REASON FOR ELIMINATION   |
|-------------|--|
| AA          | Would not alleviate traffic problems or accommodate future traffic demands. Would have greater impacts to existing and proposed dwellings. |
| A5          | Would not alleviate traffic problems or accommodate future traffic demands. Would have greater impacts to existing and proposed dwellings. |

| ALTERNATIVE                            | REASON FOR ELIMINATION  |
|--|---|
| A3                                     | Would not alleviate traffic problems or accommodate future traffic demands. Alignment would close existing Lakeside Drive and disrupt existing subdivision.     |
| A4                                     | Would not alleviate traffic problems or accommodate future traffic demands.   |
| D2                                     | Would have greater impacts on dwellings, wetlands and vernal pools than the D1 alternative.   |
| D13 Dowd Modified                      | Eliminated from further consideration due to the non-access controlled segment on Dowd Road, proximity to existing driveways and traffic safety and operations. |
| T                                      | Would fail to meet regional traffic needs. Numerous cross-streets and driveways would remain and traffic congestion would increase.                             |
| E                                      | This alignment would not meet the regional traffic demands and existing traffic patterns.   |
| TSM (Transportation System Management) | The October 1995 Major Investment Study eliminated this alternative from further consideration.   |
| AFD                                    | Would require extensive frontage roads and right-of-way. The 1990 Stage II Project Work Program eliminated this alternative from further consideration.         |

### **S.3.1 No Build Alternative**

The “No Build” alternative would be to not build the project. However, routine maintenance and operational improvements would continue. If the “No Build” alternative were chosen, congestion would continue in the City of Lincoln. The Level of Service would continue to be a LOS F within the city limits. The safety of the traveling public and the residents of the town would be compromised due to the continuing congestion.

### **S.4 Other Major Actions in the Project Vicinity**

The transportation corridor between Sacramento and Yuba City is currently under scrutiny for improvement with a number of highway improvements being evaluated for the area. In the immediate vicinity, SR 65 is being improved with widening and interchanges from Roseville to Lincoln. The parallel routes of SR 99 and SR 70 also have improvements such as widening and the addition of interchanges proposed. The goal of Caltrans, SACOG and other agencies is to connect the Marysville/Yuba City area to the California freeway and expressway system. More information on this is offered in Chapter 1.

Other major non-transportation projects in the area include several residential developments such as Del Webb's Sun City Lincoln Hills, Lincoln Crossing, Foskett Ranch, Aitken Ranch, Three D, Sterling Pointe, and the Regional Wastewater Treatment Plant in Lincoln and Teichert Mining operation near Coon Creek. Tables 1-11 and 1-12 in Chapter 1 further describe these projects. Development of these and other areas at build-out could result in nearly 80,000 new residential units and associated commercial

development. Please see tables 1-11 and 1-12 in Chapter 1 for more information on development proposals in the Lincoln area.

#### **S.4.1 Summary of Major Environmental Impacts**

Table ii summarizes the potential environmental impacts of this project, including socioeconomic, cultural and natural resource impacts and funding. This table quantifies the impacts in each of these areas and puts these figures in table form for comparison.

Preliminary design information was used in Table ii to compare the impacts to natural resources. The same level of design was used for all the alternatives in order to provide an equal basis for comparing the alternatives. After receiving the Least Environmentally Damaging Practicable Alternative (LEDPA) concurrence from EPA and USACE, a higher level of design has been completed for just the preferred alternative. The increase in impacts is due to revised design information that was applied to the LEDPA and the application of FWS guidelines and recommendations regarding direct and indirect impacts. All of the other alternatives, if chosen as the LEDPA, would have increased impacts to resources with these revisions. The difference in resource impacts is displayed in Table iii. Only those impacts that have changed are listed in Table iii.

In addition to permanent impacts, there are temporary impacts that will occur during construction. These temporary impacts are as follows:

- Vernal and freshwater marsh habitats: 0.04 ha (0.09 ac)
- Other non-wetland waters: 0.15 ha (0.36 ac)
- Mixed riparian forest habitats: 1.52 ha (3.76 ac)

The project costs that are displayed in Table ii were based upon preliminary design data for the comparison of alternatives. The costs associated with the preferred alternative have been revised and are estimated to range from approximately \$210 to \$240 million. If any of the other alternatives had been preferred, detailed design and right-of-way data would have been applied and the associated costs would have increased accordingly.

**Table ii Summary of Impacts**

|  | <b>A5C1 Alternative</b>  | <b>AAC2 Alternative</b>  | <b>D1 Alternative</b>   | <b>D13 Alternative</b>  | <b>D13 South Modified Alternative</b>  | <b>D13 North Modified Alternative</b>   |
|--|--|--|---|---|--|---|
| Wetlands/<br>Non-<br>wetland<br>Waters           | 7.85 ha (19.4 ac)<br>wetlands/waters<br>4.65 ha (11.5 ac) vernal<br>pool/swale<br>2.59 ha (6.4 ac) of marsh<br>Two high value vernal pool<br>complexes | 6.23 ha (15.4 ac)<br>wetlands/waters<br>3.80 ha (9.4 ac) vernal<br>pool/swales<br>1.83 ha (4.5 ac) of marsh<br>Two high value vernal pool<br>complexes | 5.30 ha (13.1 ac)<br>wetlands/waters<br>2.43 ha (6.0 ac) vernal<br>pool/swales<br>2.38 ha (5.9 ac) of marsh<br>One high value marsh     | 4.73 ha (11.7 ac)<br>wetlands/waters<br>2.14 ha (5.3 ac) vernal<br>pools/swales<br>2.22 ha (5.5 ac) of marsh<br>One high value marsh    | 5.91 ha (14.6 ac)<br>wetlands/waters<br>3.28 ha (8.1 ac) vernal<br>pool/swales<br>2.22 ha (5.5 ac) marsh                 | 5.50 ha (13.6 ac)<br>wetlands/waters<br>2.23 ha (5.5 ac) vernal<br>pools/swales<br>2.95 ha (7.3 ac) of marsh              |
| Special<br>Status<br>Species                     | Vernal pool fairy shrimp,<br>vernal pool tadpole shrimp,<br>valley elderberry longhorn<br>beetle, Swainson's hawk                                      | Vernal pool fairy shrimp,<br>vernal pool tadpole shrimp,<br>valley elderberry longhorn<br>beetle, Swainson's hawk                                      | Vernal pool fairy shrimp,<br>vernal pool tadpole shrimp,<br>valley elderberry longhorn<br>beetle,<br>Swainson's hawk                    | Vernal pool fairy shrimp,<br>vernal pool tadpole shrimp,<br>valley elderberry longhorn<br>beetle, Swainson's hawk                       | Vernal pool fairy shrimp,<br>vernal pool tadpole shrimp,<br>valley elderberry longhorn<br>beetle, Swainson's hawk        | Vernal pool fairy shrimp,<br>vernal pool tadpole shrimp,<br>valley elderberry longhorn<br>beetle, Swainson's hawk         |
| Natural<br>Communities<br>Wildlife,<br>Fisheries | 93.68 ha (231.5 ac)<br>grasslands containing<br>vernal pools<br>2.06 ha (5.1 ac) riparian<br>forest<br>6.11 ha (15.1 ac) oak<br>woodland               | 88.18 ha (217.9 ac)<br>grasslands containing<br>vernal pools<br>1.05 ha (2.6 ac) riparian<br>forest<br>10.16 ha (25.1 ac) oak<br>woodland              | 76.01 ha (187.8ac)<br>grasslands containing<br>vernal pools<br>1.13 ha (2.8 ac) riparian<br>forest<br>0.4 ha (1.0 acre) oak<br>woodland | 70.05 ha (173.1 ac)<br>grasslands containing<br>vernal pools<br>1.21 ha (3.0 ac)<br>riparian forest<br>3.28 ha (8.1 ac) oak<br>woodland | 76.65 ha (189.4 ac)<br>grassland/ vernal pool<br>1.05 ha (2.6 ac)<br>riparian forest<br>0.08 ha (0.2 ac) oak<br>woodland | 80.98 ha (200.1 ac)<br>grassland/ vernal pool<br>1.213 ha (3.0 ac)<br>riparian forest<br>3.28 ha (8.6 ac) oak<br>woodland |
| Water<br>Quality                                 | 202.92 ha (501.4 ac)<br>footprint with 11 stream<br>crossings  | 196.20 ha (484.8 ac)<br>footprint with 11 stream<br>crossings  | 195.79 ha (483.8 ac)<br>footprint with 9 stream<br>crossings  | 213.88 ha (528.5 ac)<br>footprint with 9 stream<br>crossings  | 210.28 ha (519.6 ac)<br>footprint with 9 stream<br>crossings   | 214.69 ha (530.5 ac)<br>footprint with 9 stream<br>crossings  |
| Cultural<br>Resources                            | Requires small amount of<br>right-of-way from property<br>eligible for National<br>Register.   | Requires small amount of<br>right-of-way from property<br>eligible for National<br>Register. Impacts to<br>recorded archeological site                 | Requires small amount of<br>right-of-way from property<br>eligible for National<br>Register.  | Requires small amount of<br>right-of-way from property<br>eligible for National<br>Register.  | Requires small amount of<br>right-of-way from property<br>eligible for National<br>Register.                             | Requires small amount of<br>right-of-way from property<br>eligible for National<br>Register.                              |
| Section 4(f)<br>Use                              | Yes, <i>de minimis</i>   | If the archaeological site is<br>determined to require<br>preservation in place, then<br>this alternative would affect<br>a Section 4(f) property.     | Yes, <i>de minimis</i>  | Yes, <i>de minimis</i>  | Yes, <i>de minimis</i>   | Yes, <i>de minimis</i>  |



|                              | A5C1 Alternative                           | AAC2 Alternative                           | D1 Alternative                             | D13 Alternative                            | D13 South Modified Alternative             | D13 North Modified Alternative             |
|------------------------------|--|--|--|--|--|--|
| Agricultural Land            | 52.17 ha<br>128.9 ac                       | 51.1 ha<br>126.3 ac                        | 84.4 ha<br>208.5 ac                        | 102.11 ha<br>252.2 ac                      | 92.84 ha<br>229.4 ac                       | 94.74 ha<br>234.1 ac                       |
| Hazardous Waste              | Potential                                  | Potential                                  | Potential                                  | Potential                                  | Potential                                  | Potential                                  |
| Land Use/<br>Socio-economics | Residences: 461<br>Businesses: 5           | Residences: 469<br>Businesses: 2           | Residences: 20<br>Businesses: 6            | Residences: 10<br>Businesses: 3            | Residences: 10<br>Businesses: 1            | Residences: 8<br>Businesses: 3             |
| Cost                         | \$159 million (min)<br>\$200 million (max) | \$163 million (min)<br>\$195 million (max) | \$174 million (min)<br>\$205 million (max) | \$165 million (min)<br>\$196 million (max) | \$164 million (min)<br>\$195 million (max) | \$184 million (min)<br>\$220 million (max) |

Table iii Preferred Alternative Revised Impacts

| D13 North Modified            | Wetlands/ Non-wetland Waters  | Natural Communities Wildlife, Fisheries  | Water Quality  | Agricultural Land        |
|-------------------------------|---|--|--|--------------------------|
| Direct Impacts                | 0.11 ha (0.26 ac) non - wetlands/waters<br>10.9 ha (26.9 ac) vernal pools/swales<br>6.54 ha (16.15 ac) of vernal and freshwater marsh | 0.01 ha (0.02 ac) willow scrub<br>17.13 ha (42.33 ac) nonnative grassland<br>113.49 ha (280.43 ac) grassland northern hardpan vernal pool complex<br>1.65 ha (4.07 ac) grassland/northern volcanic mudflow vernal pool complex<br>0.69 ha (1.70 ac) mixed riparian forest<br>5.35 ha (13.22 ac) mixed oak woodland<br>9.55 ha (23.59 ac) vernal pool fairy shrimp critical habitat | 333.1 ha<br>(823 ac) footprint with 9 stream crossings | 157.19 ha<br>(388.40 ac) |
| Indirect Impacts <sup>1</sup> | 8.5 ha (21.0 ac) vernal pools/swales  | 6.93 ha (17.12 ac) vernal pool fairy shrimp critical habitat   | 377.2 ha<br>(932 ac) footprint                         |                          |

<sup>1</sup> Indirect impacts were determined based upon USFWS guidelines and in cooperation during Section 7 consultation.

## **S.5 Issues and Areas of Controversy**

### **S.5.1 Farmland Loss**

The proposed project would require approximately 21 to 22 ha (52-55 ac) of prime farmland. There are approximately 5961 ha (14,903 ac) of prime farmland in Placer County. Thus, the maximum amount potentially removed from production represents approximately 0.004 percent of the total.

### **S.5.2 USDA Wetland Conservation Easement**

One property within the proposed right of way for the Lincoln Bypass is in a conservation easement called the Wetlands Reserve Program administered by the U.S. Dept. of Agriculture (USDA Wetlands Conservation Easement). The Wetlands Reserve Program is a voluntary program offering landowners the opportunity to protect, preserve and enhance wetlands on their property. The program is targeted at marginal farmland that was previously wetlands. The D13 North Modified was developed to avoid this property and is presented in more detail in Chapter 2.

### **S.5.3 Growth Inducement**

Policy makers in Placer County and the City of Lincoln feel that growth is inevitable, and have developed strategies to manage it so this area retains the qualities of life the citizens' desire. The city has laid the groundwork to become the next large growth area in western Placer County. Lincoln was the state's second fastest growing community in 2004, growing at a rate of 16.8%. The City gained 1,966 housing units in 2004, bringing the population to 27,356 in January 2005.

In 1988, the City of Lincoln updated its General Plan to designate areas where development should occur. The City determined that the adoption of the proposed Land Use Element would cause significant growth inducing impacts, resulting in levels of population and urban development in excess of that which would otherwise occur within the existing city limits under the former General Plan. According to the City of Lincoln's General Plan Environmental Impact Report, Lincoln's adoption of the land use policies specified in the General Plan would commit lands for mixed urban uses that are currently used for agriculture and livestock grazing. The distribution and concentration of population would also be increased by adoption of the Land Use Element. These impacts were found to be both significant and un-mitigatable. The Bypass is a critical component

of the circulation plan. Lincoln is currently updating its 1988 General Plan with additional information on land use policies and impacts of its recent growth.

An Indirect and Cumulative Impact Analysis was prepared for the Lincoln Bypass, which includes information on growth inducing impacts. Updated information on these impacts is included in this document in Appendix I.

#### S.5.4 Sensitive Habitat Impacts

Wetlands are distributed throughout the project area; thus any project alternative involving new construction would impact wetlands. Vernal pools are considered among the more biologically sensitive wetland types due to their relative scarcity and the difficulty in mitigating impacts to this type of wetlands. Vernal pools also provide habitat for several sensitive plant and animal species found in the area. Table iv and Table v compare the total wetland loss and oak habitat loss for all the alignments.

**Table iv Wetland Habitat Loss**

|  | AAC2                 | A5C1                 | D1                   | D13                  | D13 South Modified   | D13 North Modified  |
|--|----------------------|----------------------|----------------------|----------------------|----------------------|---------------------|
| USACE Jurisdictional Waters in hectares (ac) | 6.23 ha<br>(15.4 ac) | 7.85 ha<br>(19.4 ac) | 5.30 ha<br>(13.1 ac) | 4.73 ha<br>(11.7 ac) | 5.91 ha<br>(14.6 ac) | 5.1 ha<br>(13.8 ac) |
| Vernal Pools and swales in hectares (ac)     | 3.80 ha<br>(9.4 ac)  | 4.65 ha<br>(11.5 ac) | 2.43 ha<br>(6.0 ac)  | 2.14 ha<br>(5.3 ac)  | 3.28 ha<br>(8.1ac)   | 2.0 ha<br>(5.0 ac)  |

**Table v Oak Habitat Loss**

|                                 | AAC2                  | A5C1                 | D1                 | D13                 | D13 South Modified  | D13 North Modified  |
|---------------------------------|-----------------------|----------------------|--------------------|---------------------|---------------------|---------------------|
| Oak habitat in hectares (acres) | 10.16 ha<br>(25.1 ac) | 6.11 ha<br>(15.1 ac) | 0.4 ha<br>(1.0 ac) | 3.28 ha<br>(8.1 ac) | 0.08 ha<br>(0.2 ac) | 3.28 ha<br>(8.1 ac) |

The previous tables were used in the initial comparison of the alternatives and based upon preliminary design information. The preferred alternative (D13 North Modified) was chosen based upon these preliminary numbers. The D13 North Modified alternative was then further designed, and the USFWS threatened and endangered species impact methodology was applied. In addition, wetlands were created by beavers at Yankee Slough, which contributed several hectares to the previously identified impacts. The revised impact numbers are as follows:

**Table vi Preferred Alternative Revised Habitat Loss**

| Habitat   | D13 North Modified  |
|---|---------------------|
| USACE Jurisdictional Wetlands/Waters in hectares (ac) | 6.64 ha (16.43 ac)  |
| Vernal Pools and swales in hectares (ac)              | 19.38 ha (47.90 ac) |
| Oak habitat in hectares (acres)                       | 5.35 ha (13.22 ac)  |

### S.5.5 Endangered Species Habitat

Chapters 3 and 4 describe all the special status species that could be affected by the project. The plants and animals listed in Table vii are protected by either the Federal Endangered Species Act, or the California Endangered Species Act.

**Table vii Federal and State Threatened and Endangered Species Potentially Occurring in the Project Area**

| Common Name                       | Latin Name                               | Status                                    |
|-----------------------------------|--|---|
| Swainson's hawk                   | <i>Buteo swainsoni</i>                   | State Threatened                          |
| American peregrine falcon         | <i>Falco peregrinus anatum</i>           | State Endangered                          |
| Aleutian Canada goose             | <i>Branta canadensis leucopareia</i>     | Federally Threatened                      |
| California red-legged frog        | <i>Rana aurora draytonii</i>             | Federally Threatened                      |
| Vernal pool fairy shrimp          | <i>Branchinecta lynchi</i>               | Federally Threatened                      |
| Vernal pool tadpole shrimp        | <i>Lepidurus packardii</i>               | Federally Endangered                      |
| Valley elderberry longhorn beetle | <i>Desmocerus californicus dimorphus</i> | Federally Threatened                      |
| Slender Orcutt grass              | <i>Orcuttia tenuis</i>                   | Federally Threatened,<br>State Endangered |
| Sacramento Orcutt grass           | <i>Orcuttia viscida</i>                  | Federally Endangered<br>State Endangered  |
| Bogg's Lake hedge-hyssop          | <i>Gratiola heterosepala</i>             | State Endangered                          |

## S.6 Other Federal Actions Required For This Project

### S.6.1 NEPA/404 MOU / Concurrence process

A Section 404 Individual Permit would be required from the U.S. Army Corps of Engineers (USACE) for impacts on wetlands and waters of the U.S. The USACE issues the permit; however, the U.S. Environmental Protection Agency has oversight and override authority of this permit.

Concurrence has been obtained on the project's purpose and need, range of alternatives and criteria for choosing an alternative by the signatories of the NEPA/404 MOU: the U.S. Army Corps of Engineers (USACE), U.S. Environmental Protection Agency (EPA), National Marine Fisheries Service (NMFS), the U.S. Fish and Wildlife Service (FWS), Federal Highway Administration (FHWA) and Caltrans.

An Alternatives Analysis prepared in accordance with the Clean Water Act, Section 404(b)(1) Guidelines and following the NEPA/404 Integration Process has been completed. The Alternatives Analysis identified the "Least Environmentally Damaging Practicable Alternative" (LEDPA). Written agreement that the preferred alternative is the

LEDPA is required from USACE and EPA. The LEDPA concurrence has been obtained from both the EPA (7/9/03) and USACE (8/8/03). The preferred alternative, D13 North Modified is the LEDPA based upon information contained in this EIS/R. Preliminary concurrence has been given by the EPA and USACE on the Draft Conceptual Mitigation and Monitoring Plan in December 2004. Once this final concurrence is obtained and the Final EIS/R is updated, the Conceptual Mitigation Plan will be finalized. This information will be used in obtaining the Individual Permit from the USACE.

A wetland verification was completed for the project impacts, however, that verification expired in 1991. Caltrans met with the USACE and requested that the expired verification be adequate for use in comparing impacts until a preferred alternative is chosen. At that time, a new wetland delineation and verification would be performed. The USACE agreed to this approach. (Meeting with USACE on March 11, 1999). A new Wetland Delineation was submitted to the USACE in February 2004 and is awaiting final approval, pending final design.

After circulation of the Draft EIS/R and identification of the LEDPA, a preliminary agreement with FWS on the project mitigation is required. A "Non-Jeopardy" Biological Opinion pursuant to the Federal Endangered Species Act was received from the FWS on February 2, 2005 and a preliminary agreement on mitigation has been received. A request to modify the BO was sent in January 2006 and granted on March 21, 2006.

### **S.6.2 FHWA Re-evaluation**

According to FHWA's regulations implementing the National Environmental Policy Act (NEPA), 23 CFR § 771.129(a):

[a] written evaluation of the draft EIS shall be prepared by the applicant in cooperation with the Administration if an acceptable final EIS is not submitted to the Administration within 3 years from the date of the draft EIS circulation. The purpose of this evaluation is to determine whether or not a supplement to the draft EIS or a new draft EIS is needed.

A re-evaluation was submitted to FHWA on April 12, 2006. The re-evaluation summarized the project and changes in the natural and social environment that have occurred since the Draft was circulated. FHWA concurred on April 17, 2006.

Figure i Project Location

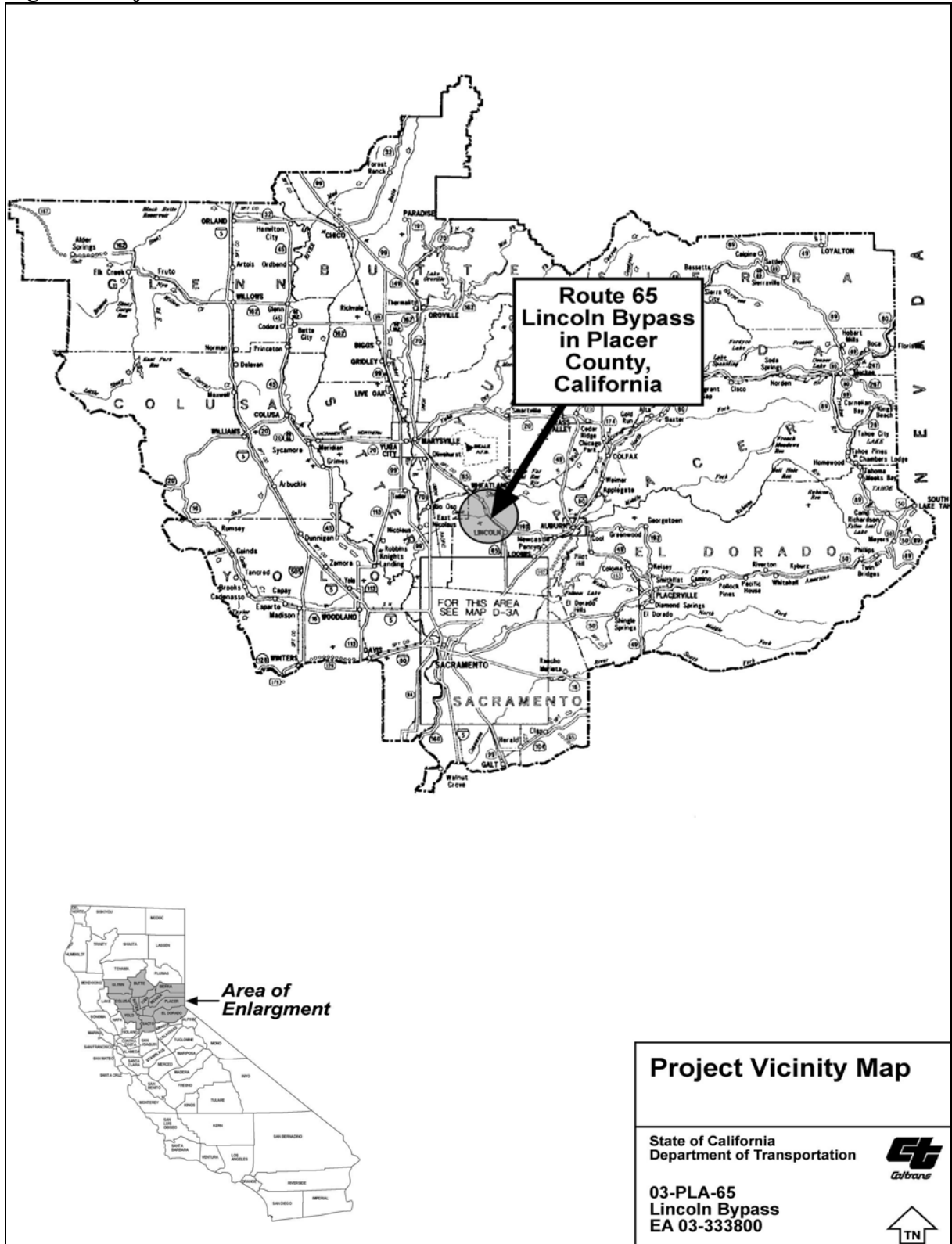


Figure ii Vicinity

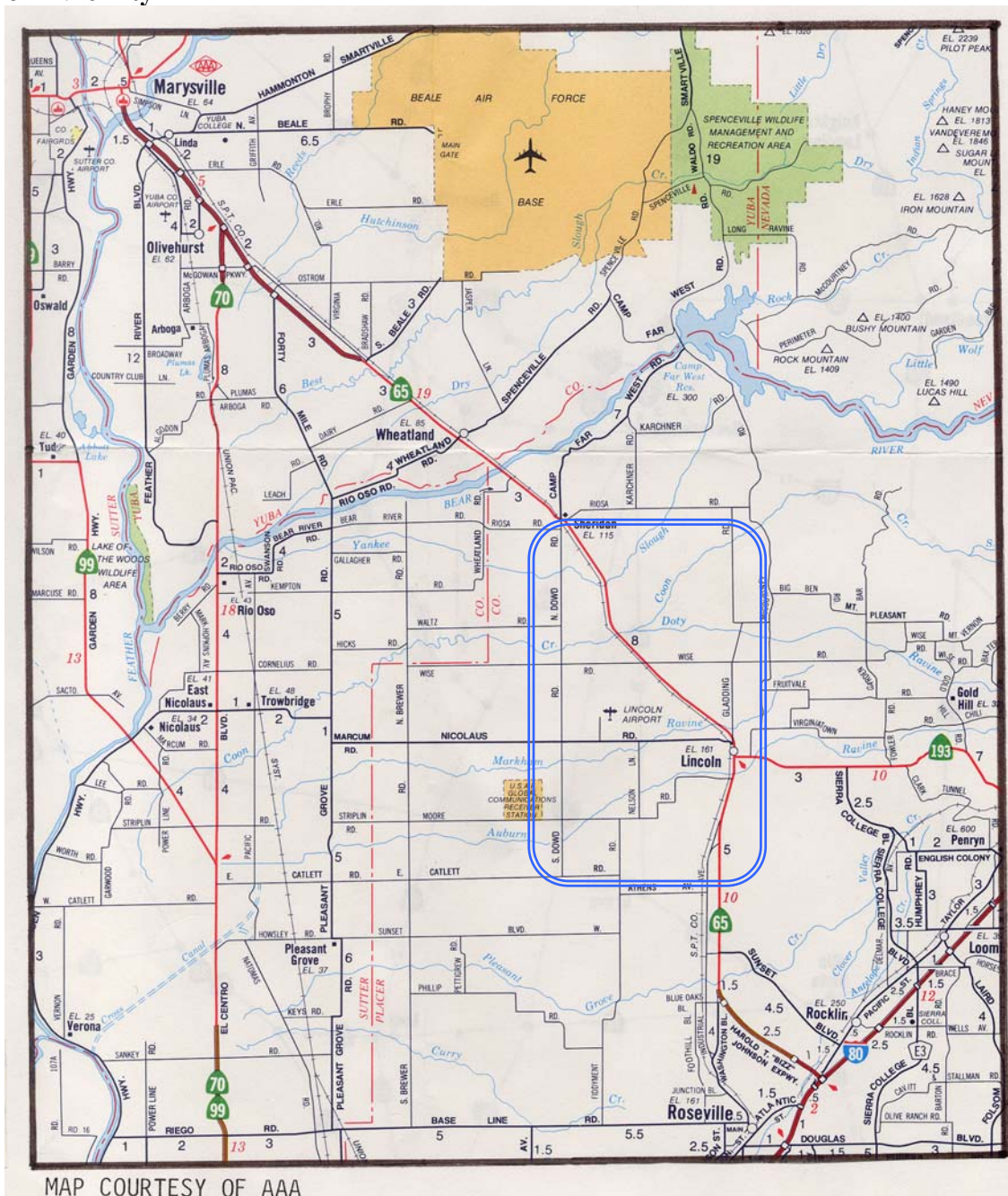
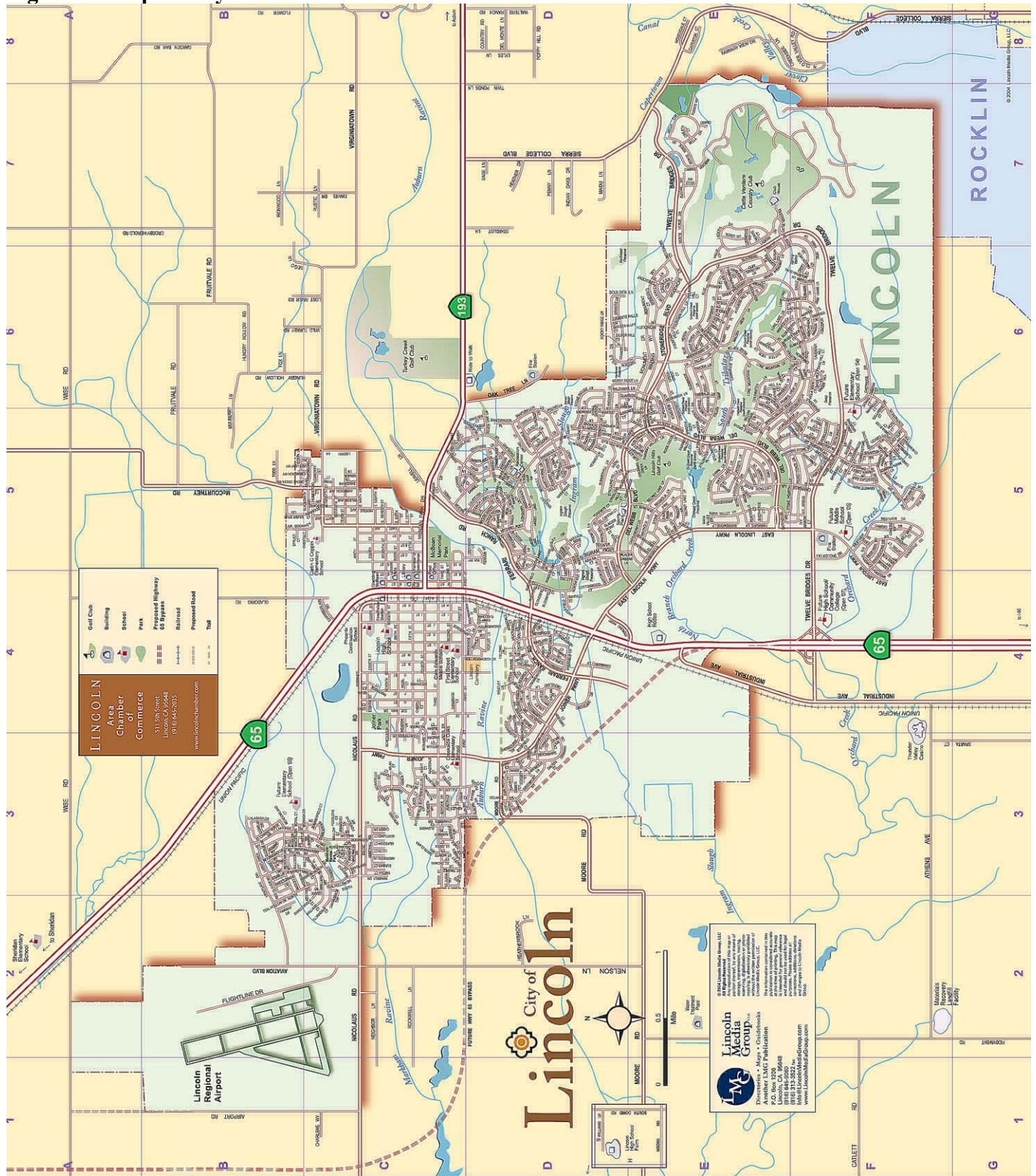




Figure iii Map of City of Lincoln



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# 1 PURPOSE & NEED

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## 1.1 INTRODUCTION

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) propose to modify the adopted route for State Route 65 (SR 65) in Placer County in the vicinity of the City of Lincoln from Kilometer Post (KP) 19.3 to 38.3 (Postmile [PM] 12.0/R23.8). This will allow for the identification and preservation of a new corridor for the eventual staged construction of a four-lane freeway with interchanges at selected locations, and the ultimate relinquishment of a portion of the existing SR 65 to the City of Lincoln and Placer County. The project begins near the junction of Industrial Avenue and SR 65 just south of the City of Lincoln and extends to the Bear River, just north of the town of Sheridan. (Please see Figure i, ii and iii following the Summary.) For a complete description of this project, please see Chapter 2, Proposed Alternatives and Figure 2-1.

This document has been prepared in conformance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) requirements to address potential environmental effects of the proposed adoption of a corridor and construction of a highway. Its purpose is to help decision makers and citizens make an informed evaluation of this project based on an understanding of its environmental consequences, and to recommend actions to protect, restore and enhance the affected environment by avoiding sensitive areas, minimizing impacts and mitigating for unavoidable impacts.

The Draft EIS/EIR was circulated for a period of 55 days from November 15, 2001 to January 15, 2002. During the draft EIS/R circulation period, public hearings were held to provide an opportunity for public comments and concerns. Comments and the response to comments from the Draft EIS/R circulation period and public hearing can be found in Appendix K.

No sooner than thirty days after the Final EIS is made available to the public and those who commented on the Draft EIS, a Record of Decision (NEPA) is published in the Federal Register. The Record of Decision explains which alternative has been selected and the rationale for why it was selected, summarizes mitigation and monitoring and summarizes efforts made to minimize the environmental impacts. It should be noted that at a future date FHWA or another Federal agency may publish a notice in the Federal Register, pursuant to 23 USC §139(l), indicating that a final action has been taken on this project by FHWA or another Federal agency. If such notice is published, a lawsuit or other legal claim will be barred unless it is filed within 180 days after the date of

publication of the notice (or within such shorter time period as is specified in the Federal laws pursuant to which judicial review of the Federal agency action is allowed). If no notice is published, then the lawsuit or claim can be filed as long as the periods of time provided by other Federal laws that govern claims are met.

The proposed project is partially funded and is programmed in the SACOG Metropolitan Transportation Plan (MTP) 2027 which was found to conform by the SACOG Board on March 16, 2006, and FHWA and FTA adopted the air quality conformity finding on April 20, 2006. The project is also included in the SACOG's financially constrained 2004-2006 MTIP, which was found to conform by FHWA and FTA on April 20, 2006. This proposed project's preferred alternative design, concept and scope are consistent with the above-mentioned documents, the 2004 STIP, and the proposed 2006 STIP. A local air quality analysis (Carbon Monoxide) has been performed.

In order for the project to be included in the MTIP, it must be in conformance with air quality standards and must meet certain criteria. This project has been analyzed and will not significantly change the air quality in the City of Lincoln.

### **1.1.1 Project History**

SR 65 runs between the Placer County line to just north of Wise Power House Road and was adopted as a freeway by the California Highway Commission, (now known as the California Transportation Commission (CTC)) on May 20, 1964. Since that time there have been considerable changes in land uses along the existing alignment from Roseville through Lincoln. Once primarily agricultural in nature, the past thirty years has seen a shift to industrial, residential and commercial land uses within the corridor. In the 1980s, the city of Lincoln, recognizing the need to preserve a corridor for another route due to growth in the area, requested the CTC to consider a modification to the Route for the portion between Industrial Avenue to just north of the city of Lincoln (Resolution No. 87-23). This project is one of several transportation projects responding to the growth in the area. These are listed in Section 1.3.11 later in this chapter.

Caltrans prepared a Project Study Report for a new Route Adoption for the Lincoln Bypass in July 1987. In November of that same year, a public informational meeting was held. (A summary of public involvement can be found in Chapter 7, Comments and Coordination.)

The CTC included the proposed route adoption in its 1988 State Transportation Improvement Program (STIP) Special Studies list of projects.

A Major Investment Study (MIS) was completed in October 1995 that evaluated different transportation solutions to the increasing congestion along this corridor. The

MIS concluded that a highway facility is the most efficient and cost effective solution to the congestion along this route. The MIS is summarized in Section 1.3.9.

A Notice of Initiation of Studies was circulated to State, Federal and local agencies and organizations in July of 1989 and the Stage II Work Program, which discussed most of the alternatives now being evaluated, was prepared by Caltrans in March, 1990.

A Notice of Preparation was sent to the State Clearinghouse on June 18, 1990 and a Notice of Intent was published in the Federal Register on June 28, 1990. These Notices described the project that is now being proposed. Copies of these documents can be found in the Appendix B.

Two more public informational meetings were held; on May 1, 1990 and April 18, 1991 and three newsletters were sent out between April 1990 and March 1993. The information obtained from these workshops and responses to the notices were used to refine the projects alternatives, and studies evaluating the environmental impacts were initiated.

An additional informational meeting was held on September 22, 1999. At that meeting, it was suggested by a number of attendees to combine alternative D1 and D13, thereby moving the alignment further from homes in the Brookview subdivision. This alternative was considered and is described in Chapter 2.

At that meeting, it also came to light that some property on the northern end of the project was slated for a Wetland Conservation Easement. Due to these impacts, two more alternatives, D13 North Modified and D13 Dowd, were proposed that avoided that property. The D13 Dowd alternative was withdrawn from consideration due to operational conflicts. Both are discussed in Chapter 2.

A public open house was held on December 18, 2001 during the circulation of the draft environmental document. Approximately 300 people signed in and 176 submitted comments. The comments ranged in nature from supportive of the project to concern over the loss of farmland and the rural feel of the area. The resource agencies concerns were focused on loss of habitat for vernal pools and their denizens, the Swainson's hawk and growth inducement. Copies of the comments and responses to comments can be found in Appendix K.

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## **1.2 PURPOSE OF PROJECT**

The purpose statement for this project was developed with the cooperation and concurrence of the U.S. Fish and Wildlife Service, the U.S. National Marine Fisheries Service, the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers under the terms of the NEPA/404 Memorandum of Understanding (MOU). The project purpose is to relieve congestion and improve safety on existing SR 65

through the City of Lincoln and provide for a regional traffic solution to accommodate projected traffic volumes through the year 2025.

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## 1.3 NEED FOR PROJECT

Continued growth in South Placer County and the Sacramento Valley has resulted in the need for a new and improved SR 65 corridor, which would alleviate congestion in the City of Lincoln while providing for improved inter-regional traffic flow. The existing facility through Lincoln is a “Main Street” highway, which will not serve the ultimate transportation needs of the region. Due primarily to congestion, the accident rate in downtown Lincoln is higher than the Statewide average rate for this type of facility. As traffic volumes continue to increase, SR 65 within downtown and south of Lincoln has exceeded available capacity.

### 1.3.1 Existing Roadway

SR 65 serves as a major north-south highway along the east side of the Sacramento Valley. It was included as part of the State Highway System under authorization of the State Highway Act of 1909, and was made part of the California Freeway and Expressway system in 1959. The original construction from Roseville to Lincoln, designated as SR 3, took place between 1912 and 1914 and was adopted as a freeway by the California Highway Commission (now known as the California Transportation Commission [CTC]) on May 20, 1964. SR 65 connects the urbanized areas of Sacramento and Roseville with the cities of Lincoln, Wheatland, Marysville and Yuba City. SR 65 begins in Roseville at I-80, extending to the junction of SR 70 in Yuba County. Legislation was passed in 1985 extending the legislative description of the route to SR 99 in Yuba City.

The SR 65 Roseville Bypass was completed from I-80 to Pleasant Grove Creek Bridge (KP 7.7 to 14.2 [PM R4.8 to R8.8]) in the late 1980's. The Harding Boulevard (later renamed Galleria / Stanford Ranch Road) interchange, a locally funded project at KP 9.5 (PM R5.9), was completed in 1992. Interchanges were later added at Pleasant Grove Boulevard (PM 7.2) and Blue Oaks Boulevard / Washington Boulevard (PM 8.1). SR 65 then becomes a four-lane expressway with an intersection at Sunset Boulevard (PM 9.6). A freeway interchange was added at Twelve Bridges Drive (PM 11.9), and the section from Industrial Boulevard north to Ferrari Ranch Road was recently upgraded to a four-lane conventional highway with turn lanes.

The downtown business section begins just north of Auburn Ravine at KP 19.7 (PM 12.24) and continues to Gladding Road. Beginning at First Street, one through-lane in each direction is provided with a continuous two-way left turn lane. On-street parking and sidewalks are also provided. Traffic signals are located at Ferrari Ranch Road, First

Street, Third Street, SR 193 (also known as Fourth St.), and Fifth and Seventh Street. The left turn lane ends near Gladding Road, at the edge of town.

The existing road between Lincoln and Sheridan is a two-lane conventional highway. It is parallel to and east of the railroad tracks. Right of way in this vicinity is typically 30.5 to 33.5 m (100-110 ft) wide. Between Lincoln and Sheridan, there are two passing opportunity locations; each approximately 2.4 km (1.5 mi) long. Curves and left-turn channelization along this section of highway limit passing opportunities.

From Sheridan north, the route continues as a two-lane conventional highway, passing through the town of Wheatland, slowing down traffic to 35 mph. Three miles north of Wheatland, the highway becomes a four-lane freeway and terminates at the SR 99 in Yuba City.

### **1.3.2 Traffic Summary**

The Lincoln Bypass will provide a substantial benefit in accommodating regional traffic and helping to reduce congestion in and south of Lincoln. Without the Bypass future traffic congestion will create gridlock conditions within and surrounding Lincoln.

As a result of the gridlock in Lincoln, traffic diverts to local streets and causes congestion. This delays emergency vehicles and may prevent them from responding in a timely manner. Commute, local, recreation and regional trip travel times increase dramatically and overall quality of life suffers.

The Lincoln Bypass will reduce overall delay within the project Study Area by over 300% and will increase overall speeds in the Study Area by over 250% in 2025 compared to the “No Build” Alternative. See Table 1-4 and Table 1-5 for more detailed information. The ultimate project, which will not be built until additional funding becomes available, will provide speeds of 105 kph (65 mph) compared to speeds of less than 40 kph (25 mph) on the existing route between Industrial Avenue and the Bear River, which, coincidentally, also marks the Placer/Yuba county line.

### **Traffic Study Methodology**

Two types of traffic models were used to complete the traffic study for the Lincoln Bypass: a regional demand model and micro-simulation model. A regional demand model is comprised of many zones, which include land use elements such as the number of houses, amount of employment and future housing and employment changes in and around the City of Lincoln. This demand model provides the future traffic volumes and determines the amount of traffic that will use the Bypass, interchanges and local roads.

The Regional Demand Model used for this project consists of two traffic models, the Yuba/Sutter Travel Demand Model (YSTDM) and the Butte County Transportation Model. The Sacramento Area Council of Government (SACOG) is responsible for the YSTDM and



the Butte County Association of Government (BCAG) is responsible for the Butte County Model. The two transportation models were combined into one model in order to analyze traffic demand using roadway corridors throughout the various counties. Included in the combined model are Butte, Sutter and Yuba Counties, and parts of Placer, Sacramento and Yolo Counties.

Land-use for years 1998, 2015 and 2025 and the model files were obtained from SACOG and BCAG covering their respective areas. Recent traffic count data and future road network information were obtained from all local agencies and used where needed. The Statewide Travel Survey (Caltrans) and the Household Travel Survey Report #1 (SACOG) were used for the number of trips, average trip length and other pertinent information.

### ***The CORSIM Model***

If a traffic system is simulated on a computer, it is possible to predict the effects of a proposed project on the traffic system's operational performance. Outputs from a simulation model also provide the basis for optimizing this performance.

Starting in the mid 1970's, the FHWA recognized this need and ultimately TRAF was developed. TRAF, abbreviated from TRAFFIC, consists of an integrated set of simulation models, which includes CORSIM. CORSIM stands for corridor simulation and consists of a freeway network named FRESIM and a surface street network named NETSIM.

CORSIM is a micro-simulation model, which means each vehicle using a specified car-following logic is a distinct object that is moved every second and its behavior interacts with the surrounding environment. This may include other vehicles, control devices (such as traffic signals) and roadway characteristics. In addition, vehicle types can be specified with different operating performance characteristics and driver behavior characteristics (passive or aggressive) can be assigned to each vehicle. Many other model elements can be modified or customized. CORSIM is a stochastic model, which allows vehicles to be simulated in a more realistic manner by using randomness in the analysis.

A micro-simulation model has the ability to evaluate the proposed improvements in detail and provide a myriad of outputs. CORSIM also has the ability to show vehicle animation, which is useful to show the traffic study results to the project development team, to the public and to project management or elected officials.

The CORSIM micro-simulation traffic model used for this project compares different alternatives over different time periods. These include the 1998 Base Year, 2015 and 2025 No Build, and the D13-D1, A5C1-AAC2 alternatives for years 2015 and 2025. The model outputs include such items as the amount of traffic diverted from the existing SR 65 to the new Bypass and average speeds on the Bypass and on the old SR 65 for each of the alternatives. It is important to note the traffic model is more accurate in comparing the

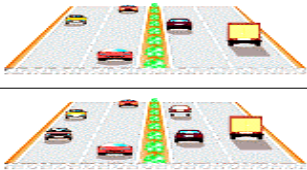
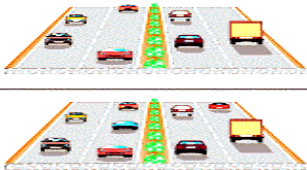
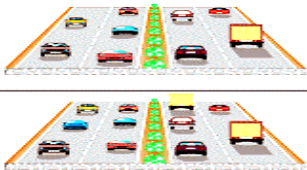
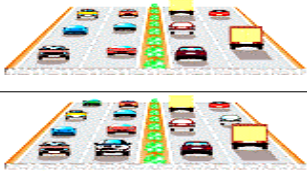

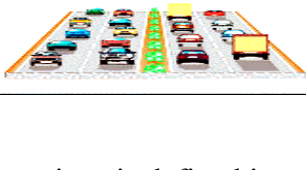


relative difference between alternatives than in predicting the future results as absolute values.

### 1.3.3 Level of Service

Segments of highway or roadway are evaluated for present and/or future traffic handling capacity through use of standardized Level of Service (LOS) grading systems. LOS is a qualitative measure describing operational conditions within a traffic stream or at an intersection, generally described in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience and safety. LOS are designated A through F, from best to worst, and they cover the entire range of traffic operations that may occur. Figure 1-1 illustrates what LOS means with regard to a freeway segment with a free flow speed of 105 kph (65 mph). Different criteria are used to determine the Levels of Service at intersections, illustrated in Table 1-1. The Lincoln Bypass will be designed for a Level of Service C to E.

Figure 1-1 Level of Service for Freeways

| <b>LEVELS OF SERVICE</b><br>for Freeways |   |                       |  |
|--|---|-----------------------|--|
| Level of Service                         | Flow Conditions   | Operating Speed (mph) | Technical Descriptions   |
| <b>A</b>                                 |  | 70                    | Highest quality of service. Traffic flows freely with little or no restrictions on speed or maneuverability.<br><b>No delays</b>         |
| <b>B</b>                                 |  | 70                    | Traffic is stable and flows freely. The ability to maneuver in traffic is only slightly restricted.<br><b>No delays</b>                  |
| <b>C</b>                                 |  | 67                    | Few restrictions on speed. Freedom to maneuver is restricted. Drivers must be more careful making lane changes.<br><b>Minimal delays</b> |
| <b>D</b>                                 |  | 62                    | Speeds decline slightly and density increases. Freedom to maneuver is noticeably limited.<br><b>Minimal delays</b>                       |
| <b>E</b>                                 |  | 53                    | Vehicles are closely spaced, with little room to maneuver. Driver comfort is poor.<br><b>Significant delays</b>                          |
| <b>F</b>                                 |  | <53                   | Very congested traffic with traffic jams, especially in areas where vehicles have to merge.<br><b>Considerable delays</b>                |

LOS at intersections is defined in terms of delay, which is a measure of driver discomfort and frustration, fuel consumption and lost travel time. LOS A represents no delay and LOS F represents very heavy traffic congestion and considerable delay. Longer delays may result from some combination of unfavorable traffic lights progression, long cycle lengths or a high volume to capacity ratio. LOS D is considered

by many agencies to be the limit of acceptable delay. LOS F results in delays over one minute long, considered by many drivers to be unacceptable. This level often occurs with over-saturation, i.e. when arrival flow rates exceed the capacity of the intersection.

**Table 1-1 LOS at Intersections**

| LOS at intersections | LOS A | LOS B | LOS C | LOS D | LOS E | LOS F   |
|----------------------|-------|-------|-------|-------|-------|---------|
| Delay (in seconds)   | <5-10 | 10-20 | 15-25 | 35-55 | 55-80 | > 60-80 |

### 1.3.4 Traffic Volumes and Level of Service

Predicted traffic volumes for the bypass were determined by using a combination of the Department 1998 Tri-County Travel Demand Model (CTCTDM), various consultant prepared traffic studies for local development, a 1998 travel survey and the City of Lincoln General Plan. Traffic volumes on the Bypass can be broken into two components; local traffic and through traffic (regional and interregional). An estimated 40% of the 2025 northbound traffic on the Bypass will access local developments and the existing industrial complex near the airport. The remaining 60% will be “through” traffic continuing towards Marysville and Roseville.

Table 1-2 shows the existing 1998 traffic volumes as well as future traffic projections for the “No Build” and “Build” scenario for the year 2015 and 2025. The worst case was used to illustrate congestion. Thus, the northbound evening peak hour volumes are used to illustrate the general congestion of the roadway since northbound is more congested than southbound in the evening and evening peak hours are generally worse than morning peak hours due to the combination of commuter trips and other trips (shopping, errands, school, etc).

The LOS for each segment is based on more factors than just the volumes shown in the table below. The additional factors include the percentage of truck traffic, the type of driver (commuter or recreational) and roadway characteristics such as shoulder width, lane width and number of driveways. The LOS at intersections is illustrated in Table 1-3.

**Table 1-2 NB/PM Peak Hour Traffic Volumes, Existing and Predicted**

| <b>Existing Route</b>             |   |                  |   |                |  |     |                               |     |
|-----------------------------------|---|------------------|---|----------------|--|-----|-------------------------------|-----|
|                                   | Industrial to First <sup>1</sup>                  |                  | First to Seventh <sup>1</sup>               |                | Seventh to Wise <sup>1</sup>   |     | Wise to Co. Line <sup>1</sup> |     |
| Year                              | VOL   | LOS <sup>1</sup> | VOL   | LOS            | VOL  | LOS | VOL                           | LOS |
| 1998                              | 1230  | E                | 1050  | D              | 620  | D   | 700                           | D   |
| 2015                              | 2000  | F                | 1200  | F              | 1100   | E   | 1000                          | E   |
| 2025                              | 2300  | F                | 1200  | F <sup>2</sup> | 1100   | F   | 1000                          | E   |
| <b>Existing Route With Bypass</b> |   |                  |   |                |  |     |                               |     |
| 2015                              | 1400  | E                | 1000  | D              | 750  | D   | 500                           | D   |
| 2025                              | 1400  | E                | 1100  | F <sup>3</sup> | 850  | D   | 600                           | D   |
| <b>On Bypass Alternative D</b>    |   |                  |   |                | <b>Footnotes</b>   |     |                               |     |
|                                   | Industrial to Nelson <sup>1</sup><br>(Four lanes) |                  | Nelson to Jct. of old<br>SR 65 <sup>1</sup> |                | <sup>1</sup> Traffic volumes for each segment are at select locations.                 |     |                               |     |
| 2015 <sup>4</sup>                 | 2200  | C                | 1350  | E              | <sup>2</sup> LOS for four hours  |     |                               |     |
| 2025 <sup>5</sup>                 | 2300  | C                | 1500  | C              | <sup>3</sup> LOS for one hour.   |     |                               |     |
| <b>On Bypass Alternative AC</b>   |   |                  |   |                | <sup>4</sup> First Phase of project (4 lanes up to Nelson or Nicolaus then to 2 lanes) |     |                               |     |
| 2015 <sup>4</sup>                 | 2300  | C                | 1350  | E              | <sup>5</sup> Ultimate project (4 lanes throughout)                                     |     |                               |     |
| 2025 <sup>5</sup>                 | 2300  | C                | 1500  | C              |  |     |                               |     |

**Table 1-3 Intersection Level of Service on Existing SR 65**

| <b>Intersections with SR 65</b> | <b>1999 LOS</b> | <b>2015 LOS NO BUILD</b> | <b>2015 LOS BUILD</b> | <b>2025 LOS NO BUILD</b> | <b>2025 LOS BUILD</b> |
|---------------------------------|-----------------|--------------------------|-----------------------|--------------------------|-----------------------|
| Sterling                        | Not Applicable  | F                        | D                     | F                        | D                     |
| Ferrari Ranch                   | C               | F                        | D                     | F                        | E                     |
| Wise                            | C               | E                        | D                     | E                        | D                     |
| Riosa                           | D               | F                        | D                     | F                        | D                     |

Continuing growth in residential, commercial and industrial development in and around the City of Lincoln has resulted in congestion on existing SR 65 through the Study Area. In 1998, SR 65 operated at an LOS D through the project area. Currently, significant queuing is observed at peak times, on a daily basis on SR 65, northbound and southbound prior to entering the City of Lincoln. This means that the signal system is operating at LOS F at peak times. Approved proposed development in and around the City of Lincoln will add to the congestion. Northbound traffic demand south of Industrial Avenue is expected to increase approximately 300% over the next 25 years. Cross traffic resulting from numerous driveways, signalized intersections and proposed future connections will further contribute to the deterioration of the level of service in the downtown area.

Regional trips originating and terminating in Lincoln are expected to increase as the City's economy grows. As of 1998, there were 19,000 vehicles per day on SR 65 in the City of Lincoln. Traffic north of Lincoln is projected to increase from 11,000 per day to approximately 32,000 vehicles per day by the year 2025. South of Lincoln, traffic

volumes on SR 65 are expected to increase from 20,000 vehicles per day to approximately 70,000 vehicles per day by the year 2025.

Table 1-4 illustrates the congestion experienced on SR 65 by comparing the overall speed and total delay for the existing road, “no build” and “build” scenarios. The Study Area includes the greater City of Lincoln area and north past Sheridan to approximately the Placer/Yuba county line.

The project was broken up into several phases due to funding constraints. A more detailed explanation of project phasing is available in Chapter 2. Briefly, the first phase of the preferred alternative is to construct a four-lane expressway to Nelson Lane (D alternatives) or Nicolaus Road (AC alternatives) with an interchange at Industrial Boulevard. The Lincoln Crossing development will construct an interchange at Ferrari Ranch Road independently from this project. A two-lane facility will be constructed for the remainder of the project, with at-grade intersections at Nelson, Wise and Riosa Roads. Ultimately, the project will be a four-lane freeway the entire length of the project with interchanges at Nelson, Wise and Riosa Roads.

**Table 1-4 Overall Speeds And Delays Within The Entire Study Area**

| Alternative                    | Overall Speed<br>During the PM peak hour (mph) | Overall total delay (vehicle hours) |             |         |
|--------------------------------|--|-------------------------------------|-------------|---------|
| 1998 Base                      | 70 kph (44 mph)                                | 70                                  |             |         |
| 2015 No Build                  | 24 kph (15 mph)                                | 1850                                |             |         |
| 2025 No Build                  | 21 kph (13 mph)                                | 2850                                |             |         |
| 2015 First phase               |  |                                     |             |         |
| D Alternatives                 | 56 kph (35 mph)                                | 500                                 |             |         |
| AC Alternatives                | 56 kph (35 mph)                                | 500                                 |             |         |
| 2025 Ultimate (4 lane freeway) |  |                                     |             |         |
|                                | Local roads                                    | Freeway                             | Local roads | Freeway |
| D Alternatives                 | 35 kph (22 mph)                                | 89 kph (55 mph)                     | 750         | 80      |
| AC Alternatives                | 35 kph (22 mph)                                | 89 kph (55 mph)                     | 750         | 95      |

Overall speeds represent the average speed of all roads in the Study Area including SR 65, SR 193 and most local roads. Overall speeds include the impacts of traffic signals, stops signs, traffic volumes and the railroad crossing on SR 65 at Sheridan. Overall delays represent the difference between free flow speed and the predicted speed.

The results show that if the Bypass is not constructed, overall speed will decrease and overall delay will increase. Speeds increase and delays decrease between the scenarios as traffic signals on the Bypass (with the first phase of the project) replaced with interchanges and overcrossings for the ultimate freeway project.

Table 1-5 shows the average speeds on SR 65 without the project, with the new SR 65 bypass and on the “old” SR 65 from Industrial Ave to the Placer/Yuba county line. The results of the table below show an increase in speed with the Bypass. Average speed

will also increase on “old” SR 65 once the Bypass is built, compared to the “no build” because traffic will be diverted to the Bypass.

**Table 1-5 Average Speeds- Industrial Ave. to Yuba County Line (PM peak hour)**

| Alternative                                      | Northbound       | Southbound       |
|--|------------------|------------------|
| <b>Existing SR 65</b>                            |                  |                  |
| 1998 Base  | 82 kph (51 mph)  | 84 kph (52 mph)  |
| 2015 No Build                                    | 26 kph (16 mph)  | 55 kph (34 mph)  |
| 2025 No Build                                    | 23 kph (14 mph)  | 34 kph (21 mph)  |
| <b>Existing Route with 2015 First Phase</b>      |                  |                  |
| D Alternatives                                   | 56 kph (35 mph)  | 56 kph (35 mph)  |
| AC Alternatives                                  | 56 kph (35 mph)  | 56 kph (35 mph)  |
| <b>On Bypass with 2015 First Phase</b>           |                  |                  |
| D Alternatives                                   | 72 kph (45 mph)  | 80 kph (50 mph)  |
| AC Alternatives                                  | 72 kph (45 mph)  | 80 kph (50 mph)  |
| <b>Existing Route with 2025 Ultimate Project</b> |                  |                  |
| D Alternatives                                   | 56 kph (35 mph)  | 40 kph (25 mph)  |
| AC Alternatives                                  | 56 kph (35 mph)  | 40 kph (25 mph)  |
| <b>On Bypass with 2025 Ultimate Project</b>      |                  |                  |
| D Alternatives                                   | 105 kph (65 mph) | 105 kph (65 mph) |
| AC Alternatives                                  | 105 kph (65 mph) | 105 kph (65 mph) |

### 1.3.5 Safety

Collision rates on existing SR 65 within the city of Lincoln are consistently higher than the Statewide average rate for this type of highway. The proposed project will relieve congestion and thus reduce collision potential in downtown Lincoln by providing a four-lane freeway to carry regional “through” traffic around the city to the west. Table 1-6 shows average collision rates for highways similar to this one, compared to the actual collision rates at different sections along SR 65 from the beginning of the year 2001 to the end of the year 2003.

**Table 1-6 Collision Rates (per million vehicle miles)**

| NUMBER OF COLLISIONS       |     |     |     | COLLISION RATE ACCS (MVM-) |      |      |         |      |      |
|----------------------------|-----|-----|-----|----------------------------|------|------|---------|------|------|
|                            |     |     |     | ACTUAL                     |      |      | AVERAGE |      |      |
| TOT                        | FAT | INJ | F+I | FAT                        | F+I  | TOT  | FAT     | F+I  | TOT  |
| 423                        | 6   | 131 | 137 | 0.021                      | 1.49 | 1.51 | 0.032   | 0.54 | 1.17 |
| 065 PLA R12.41-PLA R023.70 |     |     |     | 07/01/02-6/30/05           |      |      |         |      |      |

The AAC2, A5C1, D1, D 13, D 13 North Modified and D 13 South Modified alternatives would continue the bypass to the north of Sheridan superseding the existing at-grade railroad crossing which would also reduce the collision potential in Sheridan at the railroad crossing.

### **1.3.6 Bicycle / Pedestrian Facilities**

At this time, bicycle use in Lincoln is limited to existing streets without bike lane demarcation. Lincoln's bike plan is shown in Figure 1-2. The city has adopted a bike route plan, which is incorporated into the Placer County Bikeway Master Plan (see Figure 1-3). The proposed project does not accommodate bicycles, however after the Lincoln Bypass is built, the existing SR 65 will be available for bicycle use, with reduced auto traffic, providing for a safer and more enjoyable bike ride.

Pedestrian use on SR 65 is limited to in-town use. The freeway on either side of the town is not suitable for pedestrians.

The proposed project will have crosswalks and push buttons at all signalized intersections and all pedestrian crossings will be ADA compliant. The Ferrari Ranch Undercrossing and the future interchange will provide a full pedestrian facility. On some portions of Industrial Avenue, sidewalks and ADA compliant ramps are included.

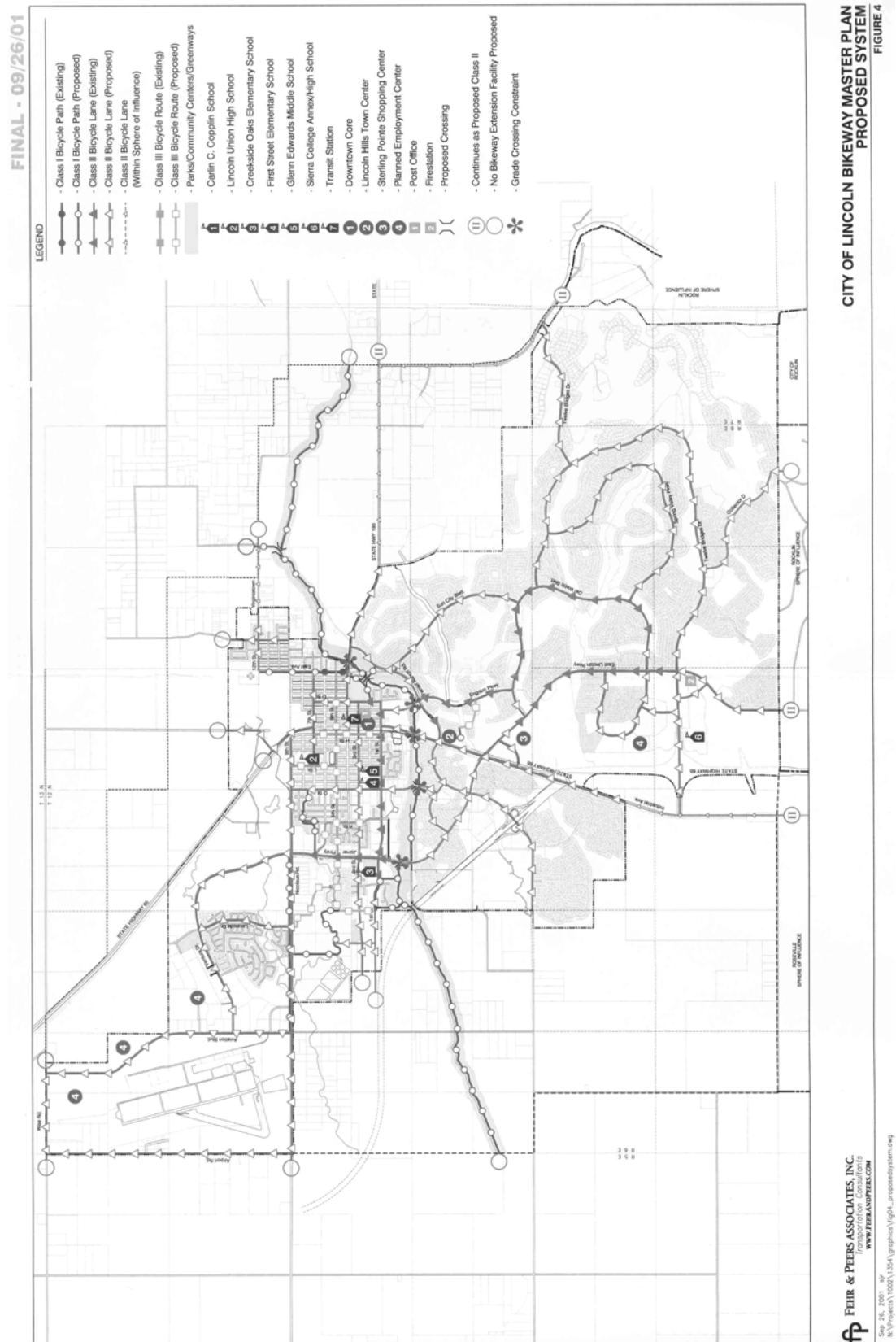
As with the bicycles, SR 65 through town will be a much more pleasant walk after the traffic has been diverted to the proposed project.

### **1.3.7 Airports**

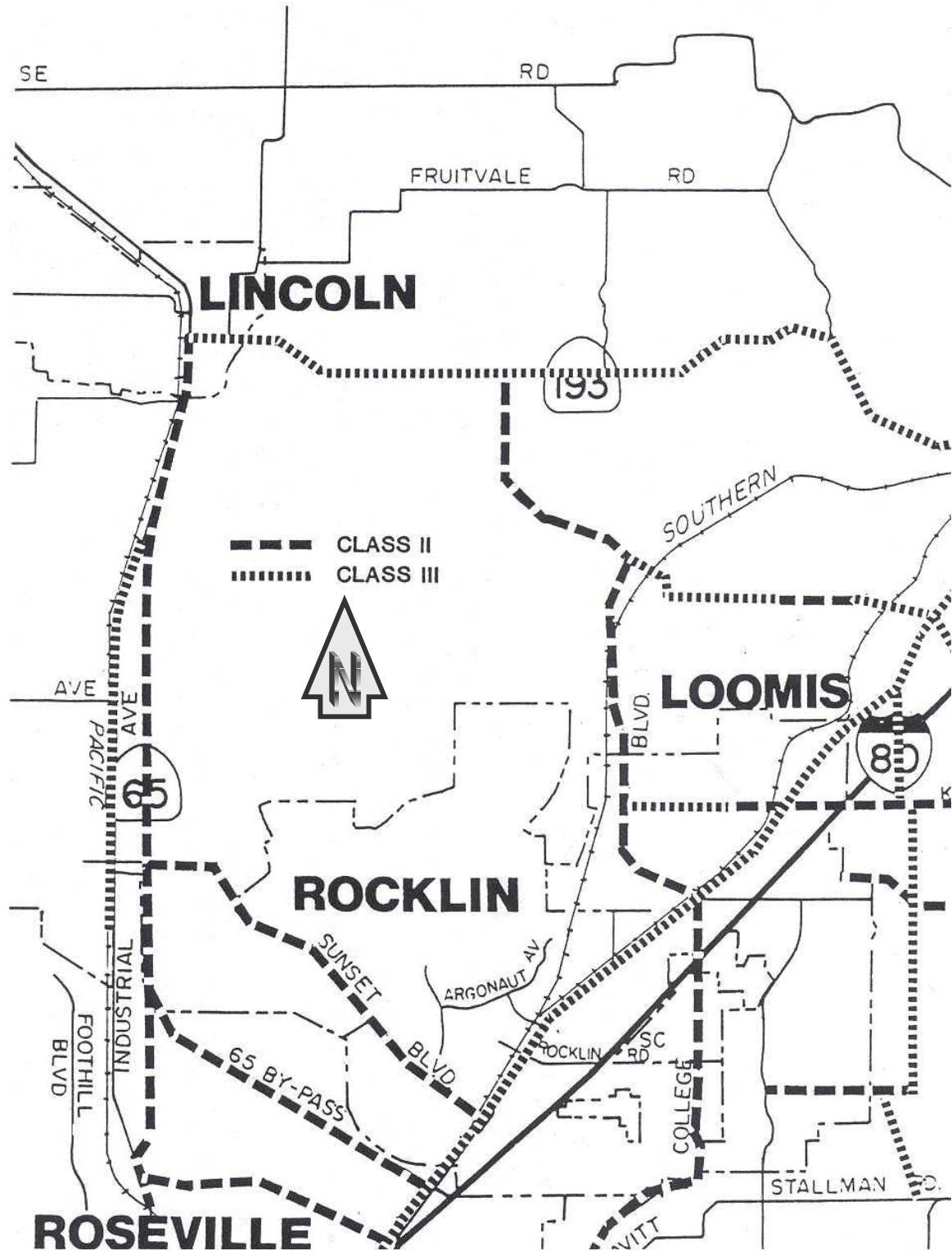
The Lincoln Municipal Airport is an important transportation link, serving recreational and corporate needs. The Lincoln Airport Authority, a public entity of the City of Lincoln, operates the airport. Due to its proximity to major industrial and population centers in the South Placer region, the Lincoln Airport has become an attractive alternative to the Sacramento International Airport, especially for executives of major industries in Rocklin and Roseville. In the year 2000 there were 210 aircraft based at this airport, with a total of 72,000 flights in and out that year. The existing capacity of the airport is approximately 200,000 operations per year, depending on the type of aircraft. The airport is designed to accommodate an additional runway, which would double its capacity. The D alternatives include improvements to Nelson Lane, which will provide for convenient access to the airport from the proposed highway.

The City of Lincoln is currently in the process of expanding industrial development in and around the Lincoln Regional Airport. New hangars are being constructed and funding mechanisms are being pursued to provide new taxiways and upgrades to current facilities.

Figure 1-2 Lincoln Bike Route Plan



**Figure 1-3 Placer County Bikeways**





### **1.3.8 Existing Transit Services**

#### **Buses**

Placer County Transit provides hourly bus service between Lincoln and Sierra College, including stops at key destinations along the way, such as the Roseville Galleria Mall. The Lincoln Transit Service operates three fixed routes within the city.

#### **Park and Rides**

There is one Park and Ride lot within the Roseville/Lincoln/Marysville corridor. It is located on Sierra College Boulevard and SR 193 east of Lincoln. It has 14 parking spaces and no bike lockers and is approximately 21 percent occupied. In addition, a Park and Ride potentially serving SR 65 is located off Interstate 80 at the junction of SR 193. That Park and Ride has 37 spaces and is generally about one third occupied.

An informal Park and Ride is located in McBean Park, next to the Pavilions. This is not a Caltrans facility, and no statistics are available on its use.

The cities of Roseville, Rocklin, Lincoln and Placer County have jointly set up ride sharing ordinances for South Placer County. The ordinances are designed to ensure that employers will share in the responsibility of mitigating some of the traffic and air quality impacts resulting from the increase in employment and auto traffic along this corridor. Larger employers are required to take certain actions to promote ride sharing among their employees; including designating a transportation coordinator to provide employees ride share and commute options information, establishing preferential parking for car/van pools and preparing a transportation plan which would achieve a 30% reduction in vehicle trips. The project proposes to secure the right of way for a Park and Ride lot facility, located adjacent to Industrial Avenue and SR 65 intersection for construction at a later date. (See Figure 2-4)

#### **Rail**

The 1997 Roseville-Lincoln-Marysville Passenger Feasibility Study defined a plan for rail service between Marysville and Sacramento. The Study concluded that the service was technically feasible either as commuter rail, which would need to be funded locally, or as intercity rail, funded as an extension of the Capital Corridor or San Joaquin service. Amtrak terminals are located in Sacramento and Marysville and the line goes through the City of Lincoln, however, the Amtrak Starlight is not anticipated to stop in Lincoln within the next 20 years. Under the management of the Capital Corridor Intercity Joint Powers Authority, Amtrak operates the Capital Corridor rail service between Sacramento and San Jose, with four trips per day to and from Colfax, stopping in Roseville and Auburn. This service is expected to generate a ridership of 8,700 passengers a day by the year 2010.

Southern Pacific Railroad operates a mainline through the center of Lincoln along the west side of SR 65. This line is used only for freight service. The railroad tracks cross seven streets at-grade in the downtown area, and the gate controlled track crossings can cause delays to side street traffic.

### **1.3.9 Major Investment Study (MIS)**

An MIS was completed October 25, 1995, focusing on SR 65 from Industrial Avenue to the Bear River. This study was written to meet metropolitan planning regulations set forth by the Inter-modal Surface Transportation Efficiency Act (ISTEA) of 1991. The MIS evaluated the efficiency and cost effectiveness of a full range of modes of transportation to be considered as solutions to transportation problems on SR 65.

Although written by the Department, the MIS was developed with the cooperation of the Sacramento Area Council of Governments (SACOG), the Placer County Transportation Planning Agency (PCTPA), the City of Lincoln, Placer County Department of Public Works, local and regional transit operators, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). Through a collaborative process with these agencies, the MIS evaluated a full range of alternatives including:

#### **Four-lane freeway bypass of Lincoln on new alignment**

The four-lane freeway bypass consists of an access controlled freeway from Industrial Avenue to the Bear River, including a partial interchange at Industrial Avenue and full interchanges at Nelson Lane, Wise Road and Riosa Road with an overcrossing at Nicolaus Road. Total cost was estimated in 1994 at \$71 million.

#### **Phase 1 Bypass alternative on a new alignment**

This alternative consists of a four-lane expressway from Industrial Avenue to Ferrari Ranch Road. The remainder of the project would be an access-controlled two-lane expressway ending at the Bear River. This alternative includes a partial interchange at Industrial Avenue and at-grade intersections at Nelson Lane, Wise and Riosa Roads with an undercrossing at Dowd Road. Total cost was estimated in 1994 at \$39.8 million.

#### **Two-lane bypass of Lincoln on new alignment**

This alternative includes the construction of a two-lane bypass of Lincoln from Industrial Boulevard to just south of Nicolaus Road. This alternative includes a partial interchange at Industrial Avenue and a full interchange at Nelson Lane, which would serve the Lincoln Airport. At-grade intersections would be provided at Nicolaus Road, Wise Road and Riosa Road. Total cost was estimated in 1994 at \$54 million.

**Intercity Transit bus service**

This alternative examines the possibility of expanding existing intercity bus service, a commute oriented rubber-tire transit service connecting the areas of Roseville, Rocklin, Lincoln and Marysville. The estimated cost is not available.

**Transportation System Management/Travel Demand Management (TSM/TDM)**

This alternative covers a range of improvements and strategies that aim to reduce the demand on and increase the efficiency of the existing transportation system, including measures such as the expansion of park and ride facilities with connections to intercity transit bus service, ride matching, car/vanpooling and teleconferencing. The estimated cost is not available.

**Widening existing SR 65 to four lanes**

The existing alignment would be upgraded to four lanes and from Moore Road through Gladding Road a continuous left turn lane would be constructed. The proposed upgrades through downtown Lincoln could generally be accomplished by eliminating on street parking and narrowing the sidewalks from 3.6 m to 1.5 m (12 to 5 ft). Total cost was estimated in 1994 at \$10 million.

**Commuter rail**

Commuter rail connecting Roseville to Marysville is addressed in the Corridor level study prepared by the PCTPA in 1997. A breakdown of costs associated with this alternative are \$13 million to bypass the Roseville Rail yard, \$16 million to operate and maintain a commuter rail over a 20 year period, \$15 million capital costs for rolling stock and an undetermined amount for track rights, possibly as much as \$20 million, for a total of \$64 million.

**No Build - Leaving SR 65 through Lincoln as is**

The no-build alternative refers to leaving the SR 65 as it is today, with no congestion relief projects.

These alternatives were evaluated and scored, and are listed above in the order they ranked. It was determined that the four-lane freeway bypass offered the best long-term solution to the congestion problem on SR 65 by improving safety and reducing travel through the City of Lincoln. All cooperating agencies approved the recommendations and signed the final MIS.

The MIS is available for review at the Caltrans District 3 office at 2389 Gateway Oaks Dr., Suite 100, Sacramento, CA 95833. Qualitative and quantitative criteria were established to accurately measure each of the alternatives effectively and ensure that they meet the purpose and need of the project. A summary table of the Alternatives Evaluation is presented in Table 1-7. The numbers in the table indicate the score each criterion was given. A score of three was high and a score of zero indicated no benefit. These criteria are:

- Delay, based upon through trips.
- Cost effectiveness.
- Environmental impacts.
- Safety.
- Fiscal constraints.
- Effects on agricultural lands.
- Indirect costs.
- Funding priorities for the county.

Using these criteria, the alternative investment strategies: rail transportation, light rail transportation and HOV lanes, although important when considered in a corridor analysis context, were eliminated from consideration in the MIS.

**Table 1-7 Summary of MIS**

| Criteria                      |                            |                              |                              |  |             | Project Costs                       |   |                          |
|-------------------------------|----------------------------|------------------------------|------------------------------|--|-------------|-------------------------------------|---|--------------------------|
| Alternatives                  | User Benefits <sup>1</sup> | Safety Benefits <sup>2</sup> | Envir. <sup>3</sup> Benefits | Local, County, Region perspective <sup>4</sup> | Total Score | Const. RW Maintenance (\$ millions) | Capital Operating & Maintenance (\$ millions) | Total Cost (\$ millions) |
| No-Build                      | 0                          | 0                            | 2                            | 0  | 2           | \$0.0/\$0.0/\$1.4                   | ~   | \$1.4                    |
| 4-Lane on existing alignment  | 0                          | 1                            | 2                            | 1  | 4           | \$5.8/\$4.2/\$1.9                   | ~   | \$11.9                   |
| 2 lane first phase bypass     | 2                          | 2                            | 1                            | 3  | 8           | \$30.2/\$9.6/\$1.5                  | ~   | \$41.3                   |
| 4-lane freeway bypass         | 3                          | 3                            | 1                            | 2  | 9           | \$61.0/\$9.6/\$1.3                  | ~   | \$56.1                   |
| Commuter Rail                 | 1                          | 0                            | 3                            | 2  | 6           | ~                                   | \$38.0<br>\$20 for track rights<br>\$16.0     | \$74.0                   |
| Intercity Transit Bus Service | 1                          | 0                            | 3                            | 2  | 6           | ~                                   | \$0.3<br>\$6.0                                | \$6.3                    |
| TSM/TDM                       | 1                          | 0                            | 3                            | 1  | 5           | ~                                   | not available                                 | not available            |

<sup>1</sup>User Benefits: A measure of Delay savings.

<sup>2</sup>Safety Benefits: Based on amount of savings due to reduced accidents.

<sup>3</sup>Environmental Benefits: Based on the alternatives potential to impact environmental resources.

<sup>4</sup>Local, County and Regional Perspective: Cooperative scoring of alternatives by City of Lincoln, Placer County Public Works and Placer County Transportation Planning Agency.

### 1.3.10 SR 65 Transportation Concept Report

The Transportation Concept Report (TCR) is a Caltrans long-term planning document that evaluates the conditions of a given state transportation corridor, and establishes a twenty year planning concept. In addition to the twenty-year concept, the TCR also looks at the ultimate transportation concept that examines the corridor needs beyond the twenty-year planning period. Forecasting beyond the twenty-year period is difficult for several reasons such as changes in future land use zoning beyond the scope of the twenty-year general plan build-out and unknown funding constraints. Therefore, any concept identified for the “Ultimate” facility must be considered speculative.

As part of route concept development, the TCR documents the planning strategies of the long-range plans identified by the Regional Transportation Planning Agencies

(RTPA) and Metropolitan Planning Organizations (MPO) within a given state highway route corridor. Since state highway routes often pass through several regional planning agency jurisdictions, the TCR assimilates the regional strategies and consolidates these strategies into one comprehensive corridor-specific document.

A TCR was completed for SR 65 in July 2001. Caltrans is currently revising the TCR and expects to have it completed by 2006. The following is a summary of the July 2001 TCR.

There are three primary sections with unique characteristics along the SR 65 corridor. Different land use classifications and growth potentials govern each segment's level of service (LOS) and classification. The segmentation presented in the TCR, further defines the roadway conditions within these route sections.

The TCR breaks the route into segments based on physical characteristics of the roadway such as number of lanes, whether the road is a freeway or a conventional highway, whether the road is in an urban or a rural setting, or some other tangible change in the roadway from one location to the next. Segments always break on county boundaries. These segments allow the characteristics of the route to be viewed and analyzed in manageable portions based on like characteristics. See figure ii in the summary for locations of streets. SR 65 is divided into six distinct segments, which are:

**Segment 1** begins at the interchange of I-80 and SR 65 (PM 4.9) and continues to the Blue Oaks Interchange (PM 8.3). This segment is a limited-access freeway with commercial and retail development on both sides, either currently in use, or planned for the near term. This development includes a regional shopping mall that contributes a significant amount of traffic to the route. Because of the proximity to I-80 there will be increased stress on the interchange and mainline as traffic both enters and exits SR 65 at this location.

**Segment 2** starts at the Blue Oaks interchange and continues to the intersection of SR 65 and Industrial Avenue (PM 11.9). This segment is currently operating as a four-lane expressway with high traffic due to significant industrial development to the west and commercial and residential development to the east. Three major interchanges are planned for this segment to accommodate the rapid growth of traffic volume. The interchanges are all to be financed through local impact fees.

**Segment 3** begins at Industrial Avenue and includes the proposed Lincoln Bypass. This new alignment will run generally parallel and to the west of the current route and bypass the City of Lincoln. This will allow a more efficient movement of through traffic than the present route, which travels through the downtown of Lincoln as a "Main Street" with traffic signals and cross traffic. The bypass proposal under consideration will rejoin the current alignment of SR 65 at approximately the county line (PM 24.3). The segment is approximately 12 miles long and is currently operating at a LOS D. The existing

"Main Street" segment is characterized by several unique features, and can reasonably be broken down further into three subsections:

The first subsection includes the portion of the route between the Industrial Avenue intersection and the city limits (PM 13.172). This area is characterized by several large, mixed-use developments. Each of these developments will add significant traffic to the already stressed capacity of SR 65. While the proposed projects contain varying amounts of land devoted to local employment opportunities, it can reasonably be assumed that there will be significant travel to and from other local and regional employment destinations.

The second subsection of this segment begins at Auburn Ravine Bridge and includes the conventional highway that runs through the City of Lincoln. There are signalized intersections and a 25-MPH speed limit through the city. In this segment there is local traffic added to the highway. Due to the turning movements of local traffic along this subsection, congestion is significant. LOS F is observed during PM peak hour within the city limits with several cycles being needed to perform some turning maneuvers. The area is characterized by on- street parking and limited roadway width. Existing sidewalks and businesses make the prospect of acquiring additional ROW in the area beyond Third Street prohibitively expensive. The crossing of Markham Ravine (PM 14.8) marks the end of this subsection. Further study needs to evaluate a new connection between SR 193 and SR 65 once the alignment for the Lincoln Bypass is determined.

The third subsection runs from the northern city limits of Lincoln (approximately at the Markham Ravine Bridge) to the Placer/Yuba county line located on the Bear River and delineated by the Bear River Bridge (PM 24.3). The highway in this segment runs in a northwesterly direction and is a conventional two-lane rural highway that is currently operating at a LOS D. The Bear River Bridge width is non-standard, and widening should be considered as part of the overall route improvement and realignment plan. Depending on the final adoption of an alignment for the Lincoln Bypass, the northern end of the bypass should intersect the existing route within this subsection.

**Segment 4** begins at the Bear River, the County line, and continues through the City of Wheatland to the beginning of the freeway at approximately South Beale Road (PM4.7). Although the traffic along this segment is relatively light, congestion exists within the City of Wheatland resulting in delays and contributing to a generally poor level of service. A bypass of Wheatland will generally better facilitate the efficient movement of goods and people along this corridor. A Project Report has been completed for the Wheatland Bypass, however, it is not funded at this time.

**Segment 5** begins at south Beale Road (PM 4.7) and goes to the end of SR 65 at the junction with SR 70 (PM 9.3). Traffic along this segment is relatively free flowing and should not need any significant modification to the facility other than routine

maintenance, during the concept period. Local fees are providing the funding for operational improvements to the interchange at this location to help accommodate the expected traffic at peak periods before and after events at the facility.

**Segment 6** is the proposed Third Crossing of the Feather River Bridge.

SR 65 serves as a key interregional connector between the rapidly growing south Placer County area and the Marysville Yuba City urban area and, by way of the proposed Third Crossing of the Feather River Bridge, the SR 99/70 corridor. The south Placer County region is one of the fastest growing areas in the State both in terms of housing and economic development. Due to the high growth potential of the areas adjacent to SR 65 (particularly the segments within Placer County) and present and potential future constraints to the physical expansion of the facility, allowances should be made at every opportunity for traffic management options that do not necessitate the physical expansion of the facility. These options may include a greater emphasis on mass transit and congestion management systems such as, but not limited to, ramp metering and HOV lanes.

### **City, County and State Transportation Plans**

#### **City of Lincoln General Plan (1988, 1994 and 1998)**

The Lincoln General Plan describes the expected long-term expansion needs of the transportation system to accommodate the growth and development of the city. The General Plan Circulation element designates a route for the SR 65 bypass. The Public Facilities Element of the General Plan, amended in 1994 and again in 1998, serves as a guide for future development and expansion of public facilities. It is also the goal of the city to see a thirty-five percent reduction in trips generated by new employment. Policies that support that goal include Rideshare, public transit funding and improved service and encouraging new development to be pedestrian friendly.

The General Plan stresses the importance of public transit. As Lincoln grows, the routes covered by the Lincoln Transit Service will be expanded to serve newly developed areas. The City will continue requiring private developers to provide for appropriate public transit amenities such as bus turnouts, bus shelters and park and ride lots. If feasible, the City will link up with the Placer County Transit System to provide inter-city transportation for Lincoln residents.

Bicycle traffic is also addressed in the General Plan. Bicycle facilities within the existing City area will be developed as part of individual projects in accordance with Lincoln's adopted bike plan. The City will work with developers to ensure that bicyclists are accommodated as new development occurs.

The Lincoln Airport continues to be an important part of the transportation system in Lincoln, especially as the municipal airports, such as the Phoenix Airport, in north

Sacramento County are closing. Other general aviation airports in Sacramento County are crowded, and Lincoln Airport is the only Placer County airport, which has a large growth capacity. The Lincoln Airport Authority has proposed major improvements to the airport over the next twenty years. These improvements are detailed in the Lincoln Municipal Airport Layout Plan (March 1999).

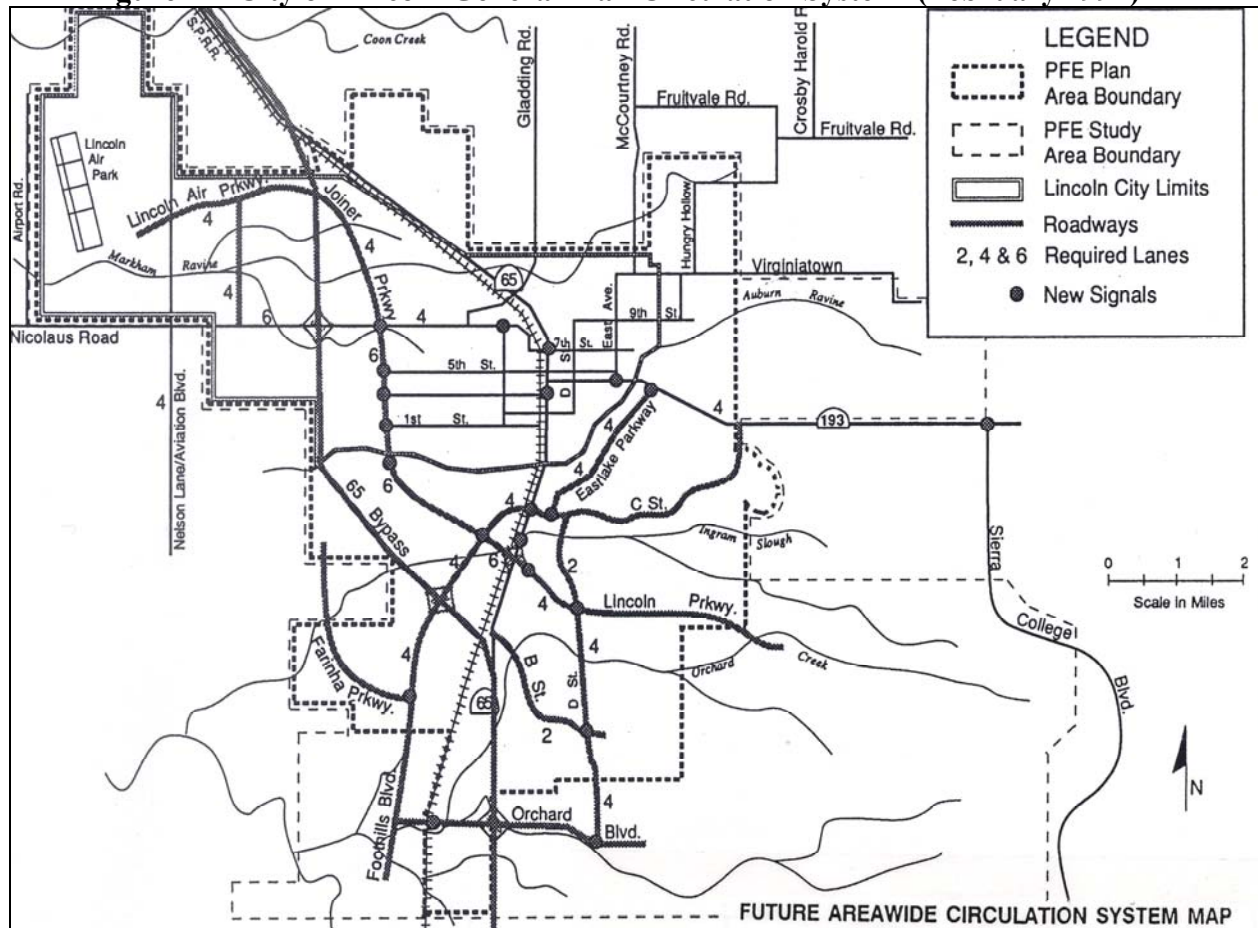
Figure 1-4 shows the future area wide circulation system. In the amended Public Facilities Element, support is affirmed for construction of the SR 65 bypass with interchanges at Ferrari Ranch Road and Nelson Lane (Policy 5.6). In their 1998 update of their Public Facilities Element Policy, the City contends that it "...will continue to place a very high priority on the construction of the Highway 65 Bypass and to aggressively pursue its funding and construction with Caltrans, Placer County Transportation Planning Agency and other appropriate agencies and private sources." It is also the goal of the city to see a thirty-five percent reduction in trips generated by new employment. Policies that support that goal include Rideshare, public transit funding and improved service and encouraging new development to be pedestrian friendly.

### **Placer County General Plan**

SR 65 from Roseville to Lincoln has been designated a *transit corridor* in the Placer County General Plan. The *transit corridor* designation is intended to encourage the development of land use and design standards that promote the viability of high-capacity transit in those corridors where there is a significant amount of undeveloped or re-developable land. As population and employment in southern Placer County increase, there will be greater opportunities for transit use. These opportunities can be maximized with planning aimed at concentrating higher intensity development and ensuring good transit accessibility.

It is the goal of the Transportation and Circulation Element of the Placer County General Plan to provide for the long-range planning and development of the county's roadway system to ensure the safe and efficient movement of people and goods.



**Figure 1-4 City of Lincoln General Plan Circulation System (February 1994)**

Policy 3.A.15 states that Placer County shall participate with other jurisdictions and Caltrans in the planning and programming of improvements to the State highway system, in accordance with state and federal transportation planning and programming procedures, so as to maintain acceptable levels of service for Placer County residents on all State Highways in the county. Placer County shall participate with the Caltrans and others to maintain adopted LOS standards in proportion to traffic impacts from locally generated traffic.

#### **Placer County Transportation Planning Agency Regional Transportation Plan**

Passed by California voters in 1990, Proposition 111 added nine cents per gallon to the state fuel tax to fund local, regional and state transportation projects and services. It also required counties with a population over 50,000 to designate a congestion management agency (CMA). The purpose of the CMA is "to recognize and address the interrelationship between land use, air quality and transportation and to maintain transportation mobility by establishing standards that encourage a balance of

transportation modes.” The Placer County Transportation Planning Agency (PCTPA) was designated the CMA for Placer County in 1991. The PCTPA’s Congestion Management Program is an alternative transportation outreach effort designed to improve air quality and make maximum use of existing transportation systems. This is discussed in the transportation Systems Management section of the PCTPA’s draft 2027 Regional Transportation Plan (RTP).

The RTP is designed to be a blueprint for the development of a balanced, comprehensive, multi-modal transportation system and becomes the Placer County portion of the Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Plan. The RTP includes a policy element that describes the short and long-range goals of the Plan, an action element that describes the programs and actions necessary to implement the Plan and assigns responsibilities and finally, a financial element that summarizes the cost of implementation.

The Action Element identifies short and long-term projects required to meet the goals of the Plan. PCTPA’s draft 2027 RTP describes the proposed Lincoln Bypass as a “westerly bypass along SR 65 around the City of Lincoln. The project consists of roughly 12-mile mixed two and four lane facility extending from Industrial Avenue in Lincoln to just north of Sheridan.” In short, this proposed projects’ preferred alternative design, concept and scope are consistent with the PCTPA’s adopted 2022 RTP and draft 2027 RTP. In order to fulfill the goals of the Plan, funding must be secured and the project must be programmed in the Regional Transportation Improvement Program (RTIP).

### **State Transportation Improvement Program (STIP), Regional Transportation Improvement Program (RTIP) and Interregional Transportation Improvement Program (ITIP)**

The State Transportation Improvement Program (STIP) is one of three documents used to allocate funds for individual projects by the California Transportation Commission. Senate Bill 45 (Kopp, 1997), the landmark STIP reform legislation, changed the STIP from nine programs to essentially two; the Regional Improvement Program (RIP) directed by regional transportation planning agencies (RTPA’s) and the Interregional Transportation Improvement Program (ITIP) managed by Caltrans. The Regional Transportation Improvement Program (RTIP) and Inter-regional Transportation Improvement Program (ITIP) are the documents containing projects nominated to be adopted into the STIP. The adopted STIP identifies the transportation improvement funding commitments for that cycle.

The proposed project is partially funded and is programmed in the SACOG Metropolitan Transportation Plan (MTP) 2027 which was found to conform by the SACOG Board on March 16, 2006, and FHWA and FTA adopted the air quality

conformity finding on April 20, 2006. The project is also included in the SACOG's financially constrained 2004-2006 MTIP, which was found to conform by FHWA and FTA on April 20, 2006. This proposed project's preferred alternative design, concept and scope are consistent with the above-mentioned documents, the 2004 STIP, and the proposed 2006 STIP.

### **1.3.11 Other Transportation Projects in the Vicinity**

#### **SR 65, Industrial to Auburn Ravine**

Two connecting public roads, Sterling Parkway and Ferrari Ranch Road, have been built between Industrial Avenue and Auburn Ravine. Joiner Parkway has been extended and crosses over the railroad tracks and existing SR65 with an overhead/overcrossing. The connection between the existing SR65 and the proposed Ferrari Ranch Road has been constructed. The original connection between Moore Road and SR65 was realigned using the Ferrari Ranch Road intersection.

#### **SR 65, Blue Oaks Boulevard to Industrial Avenue**

This project extends from Blue Oaks Blvd. to Industrial Avenue, KP 13.0/21.0 (PM 8.3/12.8). SR 65 was widened from a two lane to a four-lane expressway and an interchange constructed at Twelve Bridges Drive. The interchange, completed in 2003, was a separate project funded jointly by the SR 65 Joint Powers Authority and the city of Rocklin.

#### **Sunset Boulevard Interchange**

The project proposes to replace the existing at-grade signalized SR 65/Sunset Boulevard intersection with a grade-separated interchange. The proposed interchange is a modified L-9 partial cloverleaf configuration. The total estimated construction and right of way cost for the improvements varies from \$15.6 to \$16.5 million. These estimates exclude project development costs. The Project Study Report was approved in July 2000.

#### **Lincoln Parkway**

This is a City project that will extend Lincoln Parkway from its current end to Sterling Parkway (i.e. east of SR 65), northwest to Joiner Parkway (west of SR 65). This project will cross SR 65 and the Union Pacific Railroad Tracks with an overhead bridge structure. The structure has been designed to accommodate both the existing SR 65 widening and planned commercial frontage road improvements. The first phase of this project was completed in the fall of 2004.

#### **Wheatland Bypass**

Caltrans long-range plans are to construct a bypass around the town of Wheatland, just north of Lincoln and Sheridan. A Project Study Report (a scoping document) has

been prepared. The proposed project extends from the Lincoln Bypass, across the Bear River to KP R39.0 (PM R24.0) on SR 65 in Yuba County, about five miles past Wheatland. The CTC has not programmed this project for even preliminary engineering or environmental studies at this time.

### Placer Parkway

The proposed Placer Parkway is a high priority regional transportation project proposed to connect rapidly growing areas of western Placer County to planned development in the Sacramento/Sutter Counties. It is included in the SACOG's 2025 Metropolitan Transportation Plan (MTP) and the 2022 Placer County RTP.

### State Routes 70 and 99 Transportation Corridor Study

SR 65 ties into the transportation corridor which encompasses State Routes 70, 99 and 65, connecting Sacramento to the growing cities of Roseville, Rocklin, Lincoln, Marysville/Yuba City and on up through Oroville to Chico.

The SR70/99 Corridor Study (SACOG & BCAG, July 1990) was requested by the California Transportation Commission (CTC) responding to a need to provide the Marysville/Oroville/Chico area with freeway access. The Corridor Study is to be used as the basis for future transportation investments in the area. It evaluated 24 possible freeway alignments between Chico and Sacramento, using either SR 70 or 99 as the principle alignment. A Technical Advisory Committee (TAC) and a Political Advisory Committee (PAC) compared the efficiency, environmental and social impacts and economy of each alternative and recommended further study. Table 1-8 shows transportation projects proposed for the SR 99/70 corridor.

**Table 1-8 Proposed Highway Improvement Projects within SR 65, 70/99 Corridor**

| E.A.* | Co/Route<br>KP (PM)                  | Description   | Estimated Cost<br>(\$ in millions,<br>1990 costs) | Construction<br>Year    |
|-------|--------------------------------------|---|---|-------------------------|
| 40180 | Yuba 65<br>0.8/2.4<br>(0.5/1.5)      | Install Signal and Lights & Perform Roadwork  | \$0.7<br>Operations Project                       | 2005                    |
| 29730 | Pla/Yub 65<br>14.9/2.9<br>(23.8/4.7) | Wheatland Expressway (gap closure from Lincoln Bypass to existing freeway)                                  | \$180   | Dependent on<br>Funding |
| 38641 | Sutter 70<br>0.3/8.6<br>(0.2/5.5)    | Construct four-lane expressway, near East Nicolaus from SR 99 to Cornelius Road                             | \$44.5  | Dependent on<br>Funding |
| 38642 | Sutter 70<br>8.0/13.3<br>(5.0/8.3)   | Construct 4-lane expressway near Rio Oso from Cornelius Ave. to the Bear River Br.                          | \$51.8<br>(More<br>programmed)                    | Dependent on<br>Funding |
| 37610 | Yuba 70<br>1.0/11.2<br>(0.6/7.0)     | Construct 2-lane expressway to 4-lanes, near Marysville, Bear River Bridge to 0.3 mi. south of McGowan Road | \$40.0  | Completed<br>2004       |
| 2A272 | Yuba 70<br>4.8/6.1<br>(3.0/3.8)      | Construct new Interchange south of existing Algodon Road at Motorplex Parkway                               | \$9.0 Programmed<br>\$1.7 to 13.5<br>Planned      | Dependent on<br>Phasing |
| 29730 | Yuba 65                              | Construct two lane expressway and bridge near Yuba  | \$33.2  | Dependent on            |

| E.A.*          | Co/Route<br>KP (PM)                       | Description   | Estimated Cost<br>(\$ in millions,<br>1990 costs) | Construction<br>Year    |
|----------------|---|---|---|-------------------------|
|                | 0.97/11.3<br>(0.6/7.0)                    | City, SR 99 to SR 70.   | Programmed<br>\$118 Planned                       | Funding                 |
| 38222<br>3822U | Butte 149, 70, 99<br>0.0/7.4<br>(0.0/4.6) | Construct 4-Lane Expressway and 2 Freeway-to-Freeway Interchanges                                   | \$92.4  | 2006                    |
| 37230          | Yuba 70<br>13.6/41.5<br>(8.3/25.8)        | Construct Marysville-Oroville expressway on new alignment-Phases 2 and 3                            | \$300   | Dependent on<br>Funding |
| 37230          | Butte 70<br>0.00/                         | Construct Marysville-Oroville expressway on new alignment-Phase 1; includes all PS&E                | \$17  | Dependent on<br>Funding |
| 43490          | Sutter 99<br>20.8/27.7<br>(12.9/17.2)     | Add passing lane and widen near Yuba City from Sacramento Ave. to Central Ave.                      | \$10.2  | Completed<br>2000       |
| 1A461          | Sutter 99<br>34.4/41.2<br>(21.4/25.6)     | Sutter 99 Segment 4. Tudor Bypass. Widen to four lanes near Yuba City from Central Ave. to O'Banion | \$48.8  | Dependent on<br>Funding |
| 1A462          | Sutter 99<br>36.2/45.8<br>(22.6/28.6)     | Widen to four lanes near Yuba City from O'Banion Road to near Lincoln Rd.                           | \$19.6  | Completed<br>2005       |
| 1A4320         | Sutter 99<br>18.8/20.8<br>(11.7/12.9)     | Widen to four lanes adding Bridge Capacity (Third Crossing)   | \$47.7  | Dependent on<br>Funding |
| 1A431          | Sutter 99<br>14.0/18.8<br>(8.7/11.7)      | Widen to four lanes from SR 70 to south of the Feather River (Includes PS&E for all phases).        | \$11.0  | 2007                    |
| 1A432          | Sutter 99<br>17.1/23.0<br>(11.0/14.3)     | Segment 2, Feather River Bridge. From 0.3 km north Power Line Rd to 1.0 km north Sacramento Ave     | \$34.4  | Dependent on<br>Funding |

\* E.A.-Expenditure Authorization, this number identifies the project in the Department's system.

### 1.3.12 Social Demand/Economic Development

#### Growth Forecasts

Lincoln was the state's second fastest growing community in 2004, growing at a rate of 16.8%. The City gained 1,966 housing units in 2004, bringing the population to 27,356 in January 2005. The Metropolitan Transportation Plan update, prepared by SACOG in 2002, notes that jobs are spreading out around the region and most new housing is in areas beyond existing urban development. The region is predicted to have three major job centers in 2025: downtown Sacramento/West Sacramento, Rancho Cordova/Folsom, and Roseville/Rocklin and the urban edge will expand to include Lincoln. Currently several major computer technology companies are relocating to the Sacramento Valley, primarily in Roseville and Rocklin. The need to provide congestion relief on SR 65 is related to this pattern of growth.

As land closer to Sacramento becomes built out, areas within commuting distance of the State Capital and other job centers will come under increased pressure to grow, primarily to provide housing. Population growth forecasts for Sacramento County and the SACOG region are reported in Table 1-9.

Employment opportunities are growing in the project area as well. Several major computer technology companies are relocating to the Sacramento Valley, primarily in Roseville and Rocklin. Employment projections for Placer County are shown in Table 1-10.

**Table 1-9 Population Growth in SACOG Region (12/16/04)**

|                              | <b>2005 *</b>    | <b>2010</b>      | <b>2015</b>      | <b>2020</b>      | <b>2025</b>      |
|------------------------------|------------------|------------------|------------------|------------------|------------------|
| <b>El Dorado County</b>      | <b>147,045</b>   | <b>159,422</b>   | <b>171,212</b>   | <b>184,496</b>   | <b>197,875</b>   |
| <b>Placer County</b>         | <b>301,560</b>   | <b>330,381</b>   | <b>358,488</b>   | <b>390,240</b>   | <b>422,741</b>   |
| Unincorporated Placer County | 98,158           | 115,223          | 133,147          | 153,557          | 175,445          |
| Auburn                       | 12,683           | 13,872           | 15,027           | 16,331           | 17,663           |
| Colfax                       | 1,772            | 2,019            | 2,273            | 2,562            | 2,867            |
| Lincoln                      | 26,661           | 28,364           | 29,883           | 31,582           | 33,211           |
| Rocklin                      | 52,035           | 56,765           | 61,338           | 66,498           | 71,749           |
| Roseville                    | 104,136          | 107,038          | 108,692          | 110,412          | 111,258          |
| Loomis                       | 6,115            | 7,101            | 8,129            | 9,298            | 10,548           |
| <b>Sacramento County</b>     | <b>1,361,637</b> | <b>1,454,596</b> | <b>1,539,049</b> | <b>1,633,676</b> | <b>1,725,710</b> |
| <b>Sutter County</b>         | <b>87,342</b>    | <b>98,668</b>    | <b>110,210</b>   | <b>123,311</b>   | <b>137,108</b>   |
| Unincorporated Sutter County | 27,743           | 34,631           | 42,056           | 50,532           | 59,758           |
| Live Oak                     | 6,624            | 7,387            | 8,153            | 9,021            | 9,927            |
| Yuba City                    | 52,976           | 56,650           | 60,001           | 63,758           | 67,423           |
| <b>Yolo County</b>           | <b>187,942</b>   | <b>207,450</b>   | <b>226,733</b>   | <b>248,548</b>   | <b>271,078</b>   |
| <b>Yuba County</b>           | <b>65,952</b>    | <b>75,792</b>    | <b>85,979</b>    | <b>97,561</b>    | <b>109,875</b>   |
| Unincorporated Yuba County   | 49,338           | 57,631           | 66,317           | 76,203           | 86,787           |
| Marysville                   | 12,916           | 13,314           | 13,563           | 13,826           | 13,988           |
| Wheatland                    | 3,698            | 4,847            | 6,100            | 7,531            | 9,100            |
| <b>Regional Total</b>        | <b>2,151,479</b> | <b>2,326,308</b> | <b>2,491,671</b> | <b>2,677,831</b> | <b>2,864,387</b> |

Source: <http://www.sacog.org/demographics/projections/files/split/Sacog%20Projections%20Adopted%2012.16.04%20for%20Jurisdictions%202005%20-%202025.xls>

\*Note that the base year population numbers are estimates made by the State Department of Finance's Demographic Research Unit

**Table 1-10 Employment Projections in the SACOG Planning Area (12/16/04)**

|                              | <b>2005 *</b>  | <b>2010</b>    | <b>2015</b>    | <b>2020</b>    | <b>2025</b>    |
|------------------------------|----------------|----------------|----------------|----------------|----------------|
| <b>El Dorado County</b>      | <b>51,644</b>  | <b>58,267</b>  | <b>60,681</b>  | <b>63,783</b>  | <b>66,554</b>  |
| <b>Placer County</b>         | <b>156,237</b> | <b>180,607</b> | <b>200,734</b> | <b>220,365</b> | <b>239,978</b> |
| Unincorporated Placer County | 50,221         | 54,127         | 54,817         | 55,329         | 55,279         |
| Auburn                       | 13,417         | 14,661         | 15,035         | 15,405         | 15,647         |
| Colfax                       | 767            | 1,054          | 1,314          | 1,606          | 1,918          |
| Lincoln                      | 6,158          | 8,354          | 10,499         | 12,818         | 15,285         |
| Rocklin                      | 15,003         | 17,349         | 19,541         | 21,585         | 23,642         |
| Roseville                    | 66,250         | 80,211         | 94,649         | 108,668        | 123,224        |

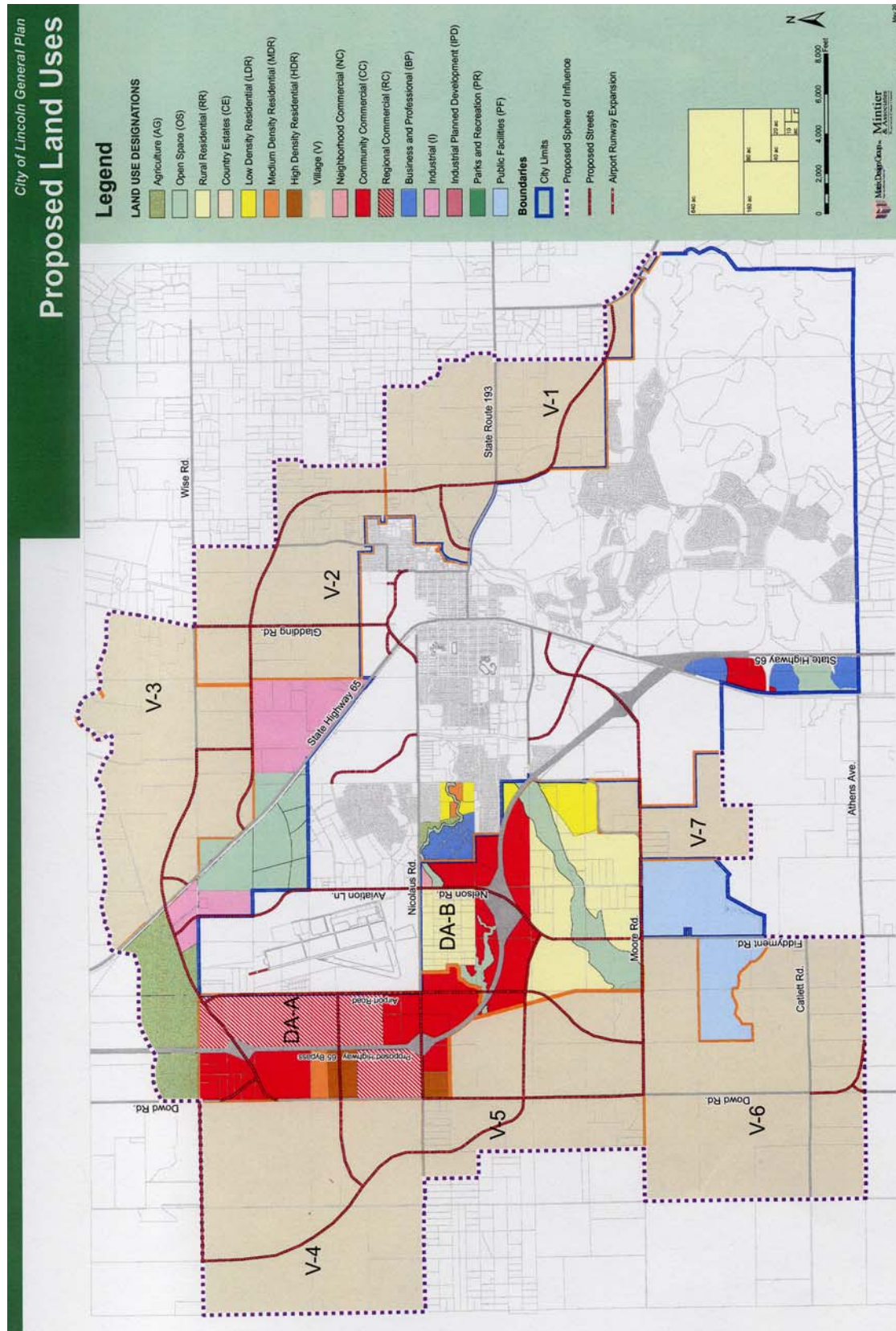
|                              | 2005 *           | 2010             | 2015             | 2020             | 2025             |
|------------------------------|------------------|------------------|------------------|------------------|------------------|
| Loomis                       | 4,423            | 4,851            | 4,879            | 4,954            | 4,983            |
| <b>Sacramento County</b>     | <b>657,100</b>   | <b>734,253</b>   | <b>777,433</b>   | <b>820,087</b>   | <b>858,840</b>   |
| <b>Sutter County</b>         | <b>33,506</b>    | <b>38,474</b>    | <b>41,341</b>    | <b>44,531</b>    | <b>47,619</b>    |
| Unincorporated Sutter County | 9,075            | 10,399           | 10,881           | 11,557           | 12,187           |
| Live Oak                     | 831              | 1,199            | 1,564            | 1,965            | 2,393            |
| Yuba City                    | 23,600           | 26,877           | 28,896           | 31,009           | 33,038           |
| <b>Yolo County</b>           | <b>136,347</b>   | <b>154,707</b>   | <b>162,775</b>   | <b>172,497</b>   | <b>181,493</b>   |
| <b>Yuba County</b>           | <b>22,988</b>    | <b>28,751</b>    | <b>32,236</b>    | <b>36,738</b>    | <b>41,391</b>    |
| Unincorporated Yuba County   | 13,641           | 17,833           | 20,405           | 23,839           | 27,435           |
| Marysville                   | 8,982            | 10,235           | 10,811           | 11,504           | 12,154           |
| Wheatland                    | 365              | 683              | 1,020            | 1,395            | 1,802            |
| <b>Regional Total</b>        | <b>1,057,823</b> | <b>1,195,059</b> | <b>1,275,200</b> | <b>1,358,000</b> | <b>1,435,875</b> |

Source: <http://www.sacog.org/demographics/projections/files/split/Sacog%20Projections%20Adopted%2012.16.04%20for%20Jurisdictions%202005%20-%202025.xls>

\*Note that the base year population numbers are estimates made by the State Department of Finance's Demographic Research Unit



Figure 1-5 Proposed Land Uses Lincoln General Plan (May 2005)





### Lincoln General Plan Land Use Element

The City of Lincoln General Plan, prepared in 1988, addresses future growth within the City boundaries and in adjoining areas within the City's sphere of influence. The Planning Area includes approximately 7,776 ha (19,500 acres or 30 square miles) and is generally bordered by Athens Avenue on the south, Sierra College on the east, Fiddymont Road, the Lincoln Airport on the west and Virginia town Road/SR 65/West Wise Road on the north. The City's current General Plan was adopted in September of 1988. The Public Facilities Element was amended in October 1998 and the Housing Element was amended in 1996. The City is currently undertaking a comprehensive General Plan update. Figure 1-5 shows the proposed changes in the land use.

Table 1-11 and Table 1-12 summarize the amount of new development that is currently being proposed within the Lincoln Planning Area. Development of these areas at build-out could result in approximately 18,704 new residential units and associated commercial development. Table 1-13 quantifies the land use designations in the Lincoln General Plan.

**Table 1-11 City of Lincoln Current Projects List (2005)**

| <b>Residential Projects</b>  |
|--|
| JOINER VILLAGE Planned Development 96 Single-Family Residential Units. Project has received approval of a Tentative Parcel Map, Specific Development Plan and Development Permit, for the development of 9.47 acres located at the northeast corner of Fifth Street and Joiner Parkway.  |
| SYCAMORE VENTURES 13 Single Family Infill Lots. Homes are under construction on Virginiatown Road and Red Leaf Way.  |
| TWELVE BRIDGES AREA C 100 Unit Planned Development with 2 church sites on 50 acres. Project has certification of an E.I.R., a Specific Plan, General Development Plan, approval of Large and Small Lot Tentative Maps, and a Development Agreement with the City.  |
| TWELVE BRIDGES AREA A 4,335 Unit Planned Development on 2,989 acres. Project has certification of an E.I.R., a Specific Plan, General Development Plan, approval of Large and Small Lot Tentative Maps, and a Development Agreement with the City. Several homebuilders have received Design Review approval and have begun construction.  |
| SUN CITY LINCOLN HILLS (Twelve Bridges Area B) 6,800 Unit Planned Development on 2,945 acres. Homes are under construction. Project has certification of an E.I.R., a Specific Plan, General Development Plan, approval of Large and Small Lot Tentative Maps, and a Development Agreement with the City. To date, 6,334 homes have been completed. Project is approved as "age-restricted." |
| LINCOLN CROSSING 2,958 Unit Planned Development on 1,070 acres. Project has received approval of a Development Agreement, General Development Plan, Specific Development Plan/Development Permit, Large Lot Tentative Subdivision Map and Small Lot Tentative Subdivision Map. Several homebuilders have received Design Review approval and are under construction:                         |

FOSKETT RANCH Planned Development of 323 Units on 290 acres. The project has certification of an Environmental Impact Report (EIR), and approval of the following: a General Plan amendment, a General Development Plan and Development Standards, a Vesting Small and Large Lot Tentative Subdivision Map, Specific Development Plan and Develop Permit for the project. In addition to 102 acres of low- and high-density residential land uses, the project includes 119 acres of Open Space and 58 acres of public/ quasi-public facilities. Two single-family homebuilders have received Design Review approval, and are under construction; the high-density (multi-family) parcel has received Specific Development Plan and Development Permit approval.

LINCOLN HIGHLANDS Annexation Application for 48 acres, 196 Residential Units. The City has approved an application for annexation of a parcel of land at the northeast corner of the City, Certification of a Mitigated Negative Declaration, pre-zoning of the land to R-1 single family residential, and Tentative Subdivision mapping. The City has approved these entitlements, however they are all contingent upon being successfully annexed into the City. Their annexation application is currently submitted to the Local Agency Formation Commission (L.A.F.C.O.) and awaiting a schedule for hearing.

CYPRESS MEADOWS Annexation Application for 20 acres, 84 Residential Units. The City has approved an application for annexation of a parcel of land at the northeast corner of the City, Certification of a Mitigated Negative Declaration, pre-zoning of the land to R-1 single family residential, and Tentative Subdivision mapping. The City has approved these entitlements, however they are all contingent upon being successfully annexed into the City. Their annexation application is currently submitted to the Local Agency Formation Commission (L.A.F.C.O.) and awaiting a schedule for hearing.

WESTERN PLACER EDUCATION FOUNDATION 71-lot single-family homes. The City has approved an amendment to the General Plan, Twelve Bridges Specific Plan and General Development Plan for the Rezone of approximately 26 acres within the southeastern portion of the Twelve Bridges Specific Plan Area A and approvals of a Specific Development Plan/Development Permit and Vesting Tentative Subdivision Map for 71 residential lots.

THREE D SOUTH 185 lot subdivision on 69.9 acres. The City has approved a General Plan Amendment, Specific Plan Amendment, General Development Plan Amendment, Tentative Subdivision Map, and Specific Development Plan and Development Permit, as well as Design Review approval for the construction of homes on 69.9 acres located along Moore Road, adjacent to and west of the future SR 65 Bypass.

AITKEN RANCH Planned Development of 472 Units on 156 Acres. The City has approved an application for various entitlements including certification of a Final EIR, General Plan Amendment, Rezoning, Adoption of a General Development Plan, Adoptions of a Large- and Small-lot Tentative Subdivision Map, and Specific Development Plan/Development Permit The project is bordered by the Lincoln Crossing Development to the north, south and east with Moore Road to the west. The homebuilder Signature Properties has received Design Review approval for Sorrento, Village I.

LAKESIDE 6 Planned Development of 706 Residential Units on 105 acres. The City has approved an application for various entitlements including certification of a Mitigated Negative Declaration, General Plan Amendment, General Development Plan Amendment, re-zoning of the land from Limited Light Industrial (LLI) to Residential (RD-5 and RD-20), and Tentative Subdivision mapping are all part of the entitlement process.

| <b>Commercial &amp; Industrial Projects</b>  |
|--|
| BUTTERFIELD BUILDING RENOVATIONS Historic Building Renovations. Project has Design Review approval and building permits for various phases and tenant improvements for the building located on the west side of " G" Street, between Fourth and Fifth Streets. The buildings will be enhanced for retail/ commercial uses and will include multiple tenant spaces and an indoor parking area.  |
| LINCOLN VILLAGE SHOPPING CENTER New Shopping Center. Project has approval of a Specific Development Plan and Development Permit for an approximately 86,760 sq.ft. shopping center. The project is located on 10.1 acres south of Twelve Bridges Drive between East Lincoln Parkway and Fieldstone Drive. Construction is currently underway.  |
| CHEVRON STATION, TWELVE BRIDGES New Gasoline Station, Convenience Store, and Carwash. Project has received approval of a Specific Development Plan and Development Permit as well as a Conditional Use Permit for the 2,945 sq.ft. gas station, mini-mart, and carwash. The project is located on the southwest corner of Twelve Bridges Drive and East Lincoln Parkway within the proposed Lincoln Village Shopping Center and is currently under construction. |
| STERLING POINTE SHOPPING CENTER New Shopping Center with Supermarket Anchor. Project has approval for a Conditional Use Permit, Specific Development Plan and Development Permit, and Design Review of a 144,000 sq.ft. shopping center with supermarket, outbuildings, restaurants a gas station and associated improvements. The project is located on the northeast corner of SR 65 and Sterling Parkway. Construction is currently underway.                 |
| PARKWAY POINTE SHOPPING CENTER New Shopping Center. Project has approval for Specific Development Plan, Development Permit and Tentative Parcel Map for a 179,800 sq.ft. Shopping Center And Associated Improvements. The project is located on the south corner of Sterling Parkway and East Lincoln Parkway.   |
| LINCOLN GATEWAY 18.14 acres of Mixed-Use Property. The proposed project involves a variety of retail, commercial, office, and housing land uses at the corner of SR 65 and First Street. A new post office will be constructed on the Business/Professional portion of the project. The residential portion of the project has been approved for 51 single-family homes.   |
| NICOLAUS RETAIL CENTER Commercial Retail Center. The project has approval of a Specific Plan and Development Permit for two retail buildings and one pad building (the pad building requires Design Review) which totals 20,400 sq.ft. of commercial/ retail building on 2.3 acres adjacent to the previously approved Tower Market on the corner of Nicolaus Road and Lakeside Drive. Construction is underway.   |
| LINCOLN COMMERCIAL CENTER New Shopping Center. Project has approval of a Specific Development Plan and Development Permit for an approximately 118, 763 sq.ft. shopping center with in-line shops, drive-thru restaurant, gas station and several satellite buildings. The project is located on 13.3 acres northwest corner of Twelve Bridges Drive and East Lincoln Parkway.   |
| LINCOLN PRODUCE New 10,700 ft 2 Market and Office Area. Project has Design Review approval for the construction of 10,700 sq.ft. retail building with office space and associated parking lot and landscaping. The building is currently under construction in the northwest corner of East Avenue and McBean Park Drive.  |
| ZISK OFFICE BUILDING Residential conversion to Office space. Project has Design Review approval for the conversion, addition and alteration of an existing tri-plex located at 304 "F" Street into an office building. The project is under construction.  |
| FARRINGTON OFFICE BUILDING New Office Building. Project has Design Review approval for the demolition of an existing residence and construction of a new 8,050 sq.ft. two-story office building at 191 "F" Street The building is currently under construction.  |

|  |
|--|
| CATTA VERDERA COUNTRY CLUB New Private Country Club. The project has approval of a Specific Plan and Development Permit for a 27,000 sq.ft. country club to be located at the easterly terminus of Catta Verdera with access off of Twelve Bridges Drive. (Formerly known as the Twelve Bridges Golf Course.) Construction is underway.  |
| LINCOLN 270 Annexation Application for 278 acres. The City is processing a Draft Environmental Impact Report EIR for the annexation of 278 acres of land located between SR 65 to the east and Industrial Boulevard to the west, bisected by Twelve Bridges Drive. The project is still in the early stages of development.  |
| HOME DEPOT New 106,507 sq.ft. Commercial Building with a 34,646 sq.ft. Outdoor Garden Center. Project has approval of a Specific Development Plan and Development Permit of a 106,507 sq. ft. Home Depot which includes 102,083 sq.ft. of retail area, 2,156 sq.ft. of Professional Will-call area and 2,268 sq.ft. of building material storage area, with a 34,646 sq.ft. outdoor garden center to be located just north of the crossroads of the future SR 65 Bypass and existing SR 65 within Lincoln Crossing. The project is currently under construction. |
| VOLEN COMMERCIAL BUILDINGS Two new 2-Story 5,032 sq.ft. Commercial Buildings. Project has Design Review approval for the construction of two 1-story 5,032 sq.ft. buildings with office and commercial uses. The proposed buildings are to be located on the east side of "G" Street approximately 100 feet south of Second Street on three vacant lots.   |
| LAVALLEE OFFICE BUILDING New 1,404 sq.ft. Office/Retail Building. Project has Design Review approval for the construction of a 1,404 sq.ft. single-story building located mid-block on the east side of "F" Street between Fifth and Sixth Streets.  |
| <b>Other</b>   |
| ST. JOSEPH'S CATHOLIC CHURCH New 20,851 sq.ft. church. Project has approval of a Specific Development Plan and Development Permit for a 20,851 sq.ft. church building, 4,795 sq.ft. administration building and the subsequent phased additions of associated building and school facilities, in addition to a Conditional Use Permit to allow the steeple to exceed the 50 ft height limit located south of SR 193 along and to the west of Oak Tree Lane.  |
| KAISER PERMANENTE New 75,138 sq.ft. Medical Office Building. Project has approval of a Specific Development Plan and Development Permit for a 2-story 75,138 sq.ft. "community oriented" Medical and Office Building and associated improvements on approximately 10-acres of Employment District (EC-1) land located north of Twelve Bridges Drive and east of SR 65 within the Twelve Bridges Main Village Area. The building has approximately 3,291 sq.ft. set aside for optical sales and approximately 4,171 sq.ft. for an outpatient pharmacy.            |

**Table 1-12 Planned Developments Summary**

| <b>Twelve Bridges/Sun City Lincoln Hills</b> |               | <b>Lincoln Crossing</b>  |               |
|--|---------------|--------------------------|---------------|
| Total Acreage:                               | 5,985 ± acres | Total Acreage:           | 1,069 ± acres |
| Residential:                                 | 2,861 ± acres | Residential:             | 622 ± acres   |
|  | 11,235 units  |                          | 2,958 units   |
| Commercial:                                  | 130 ± acres   | Commercial:              | 43 ± acres    |
| Employment Center:                           | 71 ± acres    | Open Space/Recreational: | 316 ± acres   |
| Open Space/Recreational                      | 2,648 ± acres | Infrastructure:          | 88 ± acres    |
| <b>Three D</b>                               |               | <b>Sterling Pointe</b>   |               |
| Total Acreage:                               | 104 acres     | Total Acreage:           | 76 ± acres    |
| Residential:                                 | 70 acres      | Commercial:              | 54± acres     |
| Open Space/Recreational:                     | 20 ± acres    | Natural Preserve:        | 16± acres     |
| SR 65 Bypass:                                | 13 ± acres    | Infrastructure:          | 6 ± acres     |

|                             |               |  |                          |             |  |
|-----------------------------|---------------|--|--------------------------|-------------|--|
| <b>Foskett Ranch</b>        |               |  | <b>Aitken Ranch</b>      |             |  |
| Total Acreage:              | 291 acres     |  | Total Acreage:           | 156 ± acres |  |
| Residential:                | 96 ± acres    |  | Residential              |             |  |
|                             | 501 units     |  | Low Density:             | 125 ± acres |  |
| Open Space Preserve:        | 123.2 ± acres |  |                          | 472 units   |  |
| Light Industrial/Commercial | 15.1 acres    |  | High Density:            | 6 ± acres   |  |
| School:                     | 3.1 acres     |  | Open Space/recreational: | 25 ± acres  |  |
| Public Lands:               | 43.2 acres    |  |                          |             |  |

Updated 6/22/05, Community Development Department.

Source: <http://www.ci.lincoln.ca.us/pagedownloads/Current%20Projects%205-3-05.pdf>

The Lincoln General Plan anticipates an increase in the population of Lincoln to anywhere between 19,000 to 39,000 by the year 2010. In 1988, about six square miles (20 percent) of the planning area were developed with residential, industrial, commercial or other developed uses. To accommodate the anticipated growth, the current General Plan designates approximately 35.4 km<sup>2</sup> (22 mi<sup>2</sup>) (73 percent) of the Planning Area under these uses (including 12.2 km<sup>2</sup> [7.6 mi<sup>2</sup>] designated as urban reserve). The remaining eight square miles (approximately) are designated to remain in agricultural uses including crop production and rangeland. This area is predominantly in the southwest portion of the planning area.

**Table 1-13 Lincoln General Plan Land Use Summary**

|              | Southwest |        |      | Southeast |        |       | West Lincoln City Core |        |       | Northeast |     |      | North |    |     |
|--------------|-----------|--------|------|-----------|--------|-------|------------------------|--------|-------|-----------|-----|------|-------|----|-----|
|              | DU        | AC     | DEN  | DU        | AC     | DEN   | DU                     | AC     | DEN   | DU        | AC  | DEN  | DU    | AC | DEN |
| Low Density  | 2072      | 448.14 | 4.62 | 8,266     | 2554.7 | 3.24  | 2,456                  | 574.0  | 4.28  | 1,775     | 510 | 3.48 | ~     | ~  | ~   |
| Med. Density | 744       | 101.37 | 7.34 | 1,585     | 250.8  | 6.32  | 1,226                  | 163    | 7.52  | ~         | ~   | ~    | ~     | ~  | ~   |
| High Density | 464       | 23.20  | 20   | 1,200     | 87.2   | 13.76 | 768                    | 40.0   | 19.20 | ~         | ~   | ~    | ~     | ~  | ~   |
| Total Res.   | 3,280     | 572.71 | 5.73 | 11,051    | 2892.7 | 3.82  | 4,450                  | 777.00 | 5.73  | 1,775     | 510 | 3.48 | ~     | ~  | ~   |
| Industrial   | ~         | 268    |      | ~         | 101.6  |       | ~                      | 1121   |       | ~         | ~   | ~    | 343   | ~  | ~   |
| N. C.        | ~         | ~      | ~    | ~         | 46.9   | ~     | ~                      | 17.7   |       | ~         | ~   | ~    | ~     | ~  | ~   |
| Gen. Comm.   | ~         | 27.7   | ~    | ~         | 120.9  | ~     | ~                      | 64.3   | ~     | ~         | ~   | ~    | ~     | ~  | ~   |
| B/ P         | ~         | 14.47  | ~    | ~         | 2.00   | ~     | ~                      | 12.0   | ~     | ~         | ~   | ~    | ~     | ~  | ~   |
| Open Space   | ~         | 301.1  | ~    | ~         | 1745.3 | ~     | ~                      | 118.1  | ~     | ~         | 65  | ~    | ~     | ~  | ~   |
| School       | ~         | 34.2   | ~    | ~         | 95.1   | ~     | ~                      | 90.1   | ~     | ~         | 14  | ~    | ~     | ~  | ~   |
| Other Public | ~         | 13.4   | ~    | ~         | 16.7   | ~     | ~                      | 310.5  | ~     | ~         | ~   | ~    | ~     | ~  | ~   |
| Parks        | ~         | 44.1   | ~    | ~         | 154.8  | ~     | ~                      | 65.9   | ~     | ~         | 24  | ~    | ~     | ~  | ~   |
| Golf Course  | ~         | 161.78 | ~    | ~         | 645.7  | ~     | ~                      | ~      | ~     | ~         | ~   | ~    | ~     | ~  | ~   |
| Total        | 1,437.46  |        |      | 5,821.68  |        |       | 2,576.60               |        |       | 613       |     |      | 343   |    |     |

DU: Dwelling Units

AC: Acres

DEN: Density (dwelling units per acre)

NC: Neighborhood Commercial  
(Lincoln, April 1994)

BP: Business/Professional

Gen. Comm.: General Commercial

**Placer County General Plan Land Use Element**

The SR 65 Lincoln Bypass Study Area lies partially within the City of Lincoln and partially within unincorporated Placer County. Current land use in this portion of Placer County is predominantly agriculture. According to the 1994 County General Plan land use map (updated in 1997), planned land use in the Lincoln area will remain predominantly agricultural for the 10- to 20-year General Plan planning horizon. However, due to the rapid growth in the Lincoln area, land speculation outside the Lincoln sphere of influence has occurred.

Placer County has implemented the Placer Legacy Project. The Placer Legacy Project is intended to develop specific, economically viable implementation programs that focus on the preservation of open spaces in order to maintain the abundance of the existing diverse natural habitats while supporting the economic viability of the County and enhancing property values. The Citizens Advisory Committee, the Interagency Working Group and the Scientific Working Group all work under the umbrella of the Placer Legacy to develop programs where no programs currently exist and strengthen existing programs.

**Sutter County General Plan Land Use Element**

The total county area in Sutter County is 389,489 acres. This acreage includes farmland and grazing land (agricultural), urban and built land, and other land and water areas. As with many of the counties in the central valley, the pace of urbanization in Sutter County from 1998-2000 increased compared to 1996-98, and a significant amount of farmland was reclassified as being non-cultivated according to California Department of Conservation.

In 1998, 355,920 acres were classified as agricultural and accounted for 91% of the total acreage in Sutter County. In 2000, the amount of land reclassified from agricultural land was 3,733 in 2000. The remaining balance of 352,187 in agricultural acreage represents 90%. According to the California Department of Food and Agriculture, the gross value of Sutter County's agricultural production was nearly \$343.5 million in 2000, ranking it 21st among the state's 58 counties.

Sutter County is still predominantly agricultural and County policies, reflected in the General Plan, include preservation of agricultural uses and concentration of development around existing communities. Residential development for the area closest to Lincoln will likely be limited to the rural communities of Rio Oso and East Nicolaus/Trowbridge in the foreseeable future. Table 1-14 summarizes recent land use decisions in Sutter County.

**Table 1-14 Sutter County Land Use**

| Sector     | Location               | Project                            | Stage of Development |
|------------|------------------------|------------------------------------|----------------------|
| Commercial | 3275 Colusa Hwy        | 69,860 sf Self Storage             | Planned              |
| Commercial | 6788 Colusa Hwy        | 3,360 sf Warehouse                 | Planned              |
| Commercial | Eager Road             | 12,059 sf Church Multipurpose Bldg | Planned              |
| Commercial | 1268 Stewart Road      | 96,000 sf Mini-Storage             | Under Construction   |
| Commercial | 1265 Hunn Road         | 7,000sf Car Wash                   | Completed            |
| Commercial | 1258 O'Banion Road     | 7,200 sf Trucking Business         | Completed            |
| Commercial | 3079 Riviera Road      | 3,400 sf Veterinary Clinic         | Completed            |
| Office     | 3593 Pennington Road   | 3,312 sf Office Building           | Planned              |
| Office     | Live Oak Blvd.         | 64,866 sf Government Office Bldg   | Planned              |
| Industrial | Seymour & Knights Road | 27,200 sf Warehouse/Greenhouse     | Planned              |
| Education  | El Margarita Road      | New High School                    | Under Construction   |

Source: Economic Development Corporation @ <http://www.ysedc.org/>

The General Plan designates up to 1417.5 ha (3,500 ac) of the southern portion of the County, adjacent to Sacramento County, for future industrial/commercial development. This area is so designated because of its proximity to transportation corridors (SR 70 and 99) and the Sacramento Airport.

### Unincorporated Yuba County

The Yuba County General Plan, adopted in 1996, addresses a 20-year planning horizon. The 1995 population was estimated at 64,096. This population is expected to grow to 95,000 by 2015. Yuba County includes the incorporated city of Wheatland and the unincorporated communities of Olivehurst and Linda. Table 1-15 describes land use decisions made by Yuba County. Most future growth is expected to occur within these established communities.

**Table 1-15 Developments in Yuba County**

| Sector     | Location            | Project                           | Stage of Development |
|------------|---------------------|-----------------------------------|----------------------|
| Commercial | Linda               | Wal-Mart 150,000 sf retail center | Completed            |
| Industrial | Yuba County Airport | Siller Brothers 10,000 sf hangar  | Planned              |
| Industrial | Yuba County Airport | PFI /Bolin 4-acre Storage Yard    | Planned              |

| Sector      | Location                | Project   | Stage of Development |
|-------------|-------------------------|---|----------------------|
| Industrial  | Yuba County Airport     | Century Cedar Log Homes, 10,000 sf manufacturing facility | Planned              |
| Industrial  | Yuba County Airport     | Schmidt Construction 20,000+ sf jet service facility      | Planned              |
| Industrial  | Yuba County Airport     | Protégé Builders 10,000 sf manufacturing facility         | Planned              |
| Industrial  | Yuba County Airport     | Concrete Inc. 10,000 sf facility                          | Planned              |
| Industrial  | Yuba County Airport     | Patterson Construction 10,000 sf manufacturing facility   | Planned              |
| Industrial  | Yuba County Airport     | 8-7,000 sf warehouse/light industrial bldgs.              | Under Construction   |
| Industrial  | Yuba County Airport     | D & D Cabinets 70,000 sf manufacturing facility           | Under Construction   |
| Industrial  | Yuba County Airport     | 20,000 sf corporate hangar for 6 aircraft                 | Completed            |
| Industrial  | Feather River Blvd.     | Shoei Foods 30,000 sf warehouse expansion                 | Completed            |
| Industrial  | Yuba County Airport     | Hanson Truss 30,000 sf manufacturing facility             | Completed            |
| Residential | North Arboga            | Crossroads 148 units                                      | Planned              |
| Residential | East Linda              | Spring View Estates 470 units                             | Planned              |
| Residential | Linda                   | East Linda Estates 23 units                               | Planned              |
| Residential | North Arboga            | Housing Project 383 units                                 | Planned              |
| Residential | Olivehurst              | Housing Project 8 units                                   | Planned              |
| Residential | Plumas Lake             | Housing Project 234 units                                 | Planned              |
| Residential | Plumas Lake             | Draper Ranch South 238 units                              | Planned              |
| Residential | North Arboga            | Draper Ranch North 590 units                              | Planned              |
| Residential | Loma Rica/Browns Valley | Housing Project 31 units                                  | Planned              |
| Residential | North Arboga            | Thoroughbred Acres 492 units                              | Planned              |
| Residential | East Linda              | Butler Estates 204 units                                  | Planned              |
| Residential | Linda                   | College Park 66 units                                     | Planned              |
| Residential | Plumas Lake             | Fairway Downs West 44 units                               | Planned              |
| Residential | Plumas Lake             | Wheeler Ranch Partners 1140 units                         | Planned              |
| Residential | Plumas Lake             | Woodside Village 590 units                                | Planned              |
| Residential | North Arboga            | Pheasant Pointe 125 units                                 | Planned              |
| Residential | Plumas Lake             | Riverside Meadows 878 units                               | Planned              |



| Sector      | Location      | Project                                | Stage of Development |
|-------------|---------------|--|----------------------|
| Residential | Plumas Lake   | Fairway Downs West 44 units            | Planned              |
| Residential | Plumas Lake   | Rio Del Oro 1581 units                 | Planned              |
| Residential | Plumas Lake   | The Greens 20 units                    | Planned              |
| Residential | East Linda    | College View 86 units                  | Planned              |
| Residential | Plumas Lake   | Creekside Village 159 units            | Planned              |
| Residential | Browns Valley | Housing Project 32 units               | Planned              |
| Residential | Plumas Lake   | Sawyer's Landing 205 units             | Planned              |
| Residential | East Linda    | Rothwell Estates 44 units              | Planned              |
| Residential | Plumas Lake   | The Meadows 383 units                  | Planned              |
| Residential | East Linda    | Sierra Vista 108 units                 | Planned              |
| Residential | Linda         | Normandy Estates 13 units              | Planned              |
| Residential | North Arboga  | Mapleton 180 units                     | Planned              |
| Residential | Linda         | Martha Estates 14 units                | Planned              |
| Residential | Plumas Lake   | River Oaks North 107 units             | Planned              |
| Residential | East Linda    | Quail Hollow 183 units                 | Planned              |
| Residential | East Linda    | Sutter Meadows at Edgewater 1358 units | Under Construction   |
| Residential | North Arboga  | River Glen 294 units                   | Under Construction   |

Source: Economic Development Corporation @ <http://www.ysedc.org/>

At General Plan build-out, about 49,005 ha (121,000 ac) would be under Valley Agriculture use. The General Plan calls for retaining agriculture as the primary land use in this area and protecting the agricultural community from encroachments that “would be injurious to the physical and economic well being of the agricultural community.” The Yuba River corridor lies along the northern boundary of the Community Impact Study Area. (See Section 3-11 in Chapter 3) The General Plan calls for maintaining this open space corridor while accommodating compatible recreation and wildlife uses.

The Yuba County General Plan anticipates highway improvement projects, including improvements to SR 70 and the SR 65 bypass around the City of Wheatland.

### City of Wheatland

The City of Wheatland, located on SR 65 about 1.6 km (1 mi) north of the Bear River, had an estimated population of about 3,180 in January 2004. (Source: California

Dept. of Finance, E-1 City/County Population Estimates, May 2004) Beale Air Force Base, located about 12.9 km (8 mi) northeast of Wheatland, has had a major influence on the growth of Wheatland and all of Yuba County.

The dominant land use in the Wheatland area is agriculture, primarily irrigated crops and orchards. The Wheatland General Plan (1980) recognizes the importance of agriculture to this rural community and sets goals of preserving the highest quality agricultural lands for agriculture and open space uses. Rivers, creeks and sloughs are also recognized as valuable resources and are designated for conservation and protection from urbanization.

In response to increasing development pressure in the early 1990s, the City of Wheatland prepared a 1995 Specific Plan to address future development of approximately 86.7 ha (214 ac) of vacant land within the northern half of the City. Full build-out of the Specific Plan area would yield a theoretical population of about 5,000 people within the current Wheatland city limits. The Wheatland General Plan anticipates construction of a freeway bypass of the city.

In 2004, there were 204 ha (504 ac) of land within the city limits (increases in acreage due to land annexations). Land uses are identified as single family residential, multi-family residential, commercial, industrial, public, parks, roads and infrastructure, and vacant. The following table lists acreages of existing land use within the City of Wheatland.

**Table 1-16 Acreages of the City of Wheatland Existing Land Uses**

| <b>Land Use Designations</b> | <b>Acres</b>  | <b>Percent Total</b> |
|------------------------------|---------------|----------------------|
| Single Family Residential    | 201.92        | 40%                  |
| Multi-Family Residential     | 22.54         | 4%                   |
| Commercial                   | 16.94         | 3%                   |
| Industrial                   | 0.79          | 1%                   |
| Public                       | 87.71         | 17%                  |
| Parks                        | 9.45          | 2%                   |
| Roads and Infrastructure     | 81.63         | 16%                  |
| Vacant                       | 83.04         | 17%                  |
| <b>Total</b>                 | <b>504.02</b> | <b>100%</b>          |

Based on GIS database information, 2004. General Plan Update, Public Review Draft Background Report, July 2, 2004.

<http://www.jlmintier.com/wheatland.htm>

Although the 1980 General Plan anticipates capacity for 5,500 people within the city limits, the City anticipates growth that will require future annexations. The City of Wheatland is currently undergoing a General Plan update and is anticipated to have this document completed by the end of 2005. The Yuba County General Plan designates all of the unincorporated land within the Wheatland General Plan Update Study Area as

Valley Agriculture. The General Plan anticipates replacing this designation with designations that are consistent with the City's designations, when the City of Wheatland adopts its updated plan.

The City of Wheatland's Sphere of Influence (ultimate size) is 2 miles north of the Bear River and 7 miles between Camp Far West Road and ACE Hardware, which is approximately 10,000 acres. The City's current General Plan was completed in 1980 with updates to the Land Use and Circulation Elements in 1986. The Housing Element was updated in 1992. In 1990, the City completed a Specific Plan for the vacant parcels within the City limits.

The City of Wheatland current incorporated area is approximately 500 acres. The 1980 Wheatland General Plan projected development potential of 1, 500 dwelling units with a projected population of 4,300. As of December 31, 2003, Wheatland had 1,163 residential dwelling units based on a City Public Works Department's Residential Survey dated May 2003 and building permits issued from May 2003 through December 2003. The City of Wheatland is experiencing a considerable amount of population growth and is anticipating this trend will continue for the next few years. Figure 1-6 shows the preferred land use alternative as found in the Wheatland General Plan Update. Table 1-17 gives the reader a sense of Wheatland in comparison to Yuba County and Marysville.

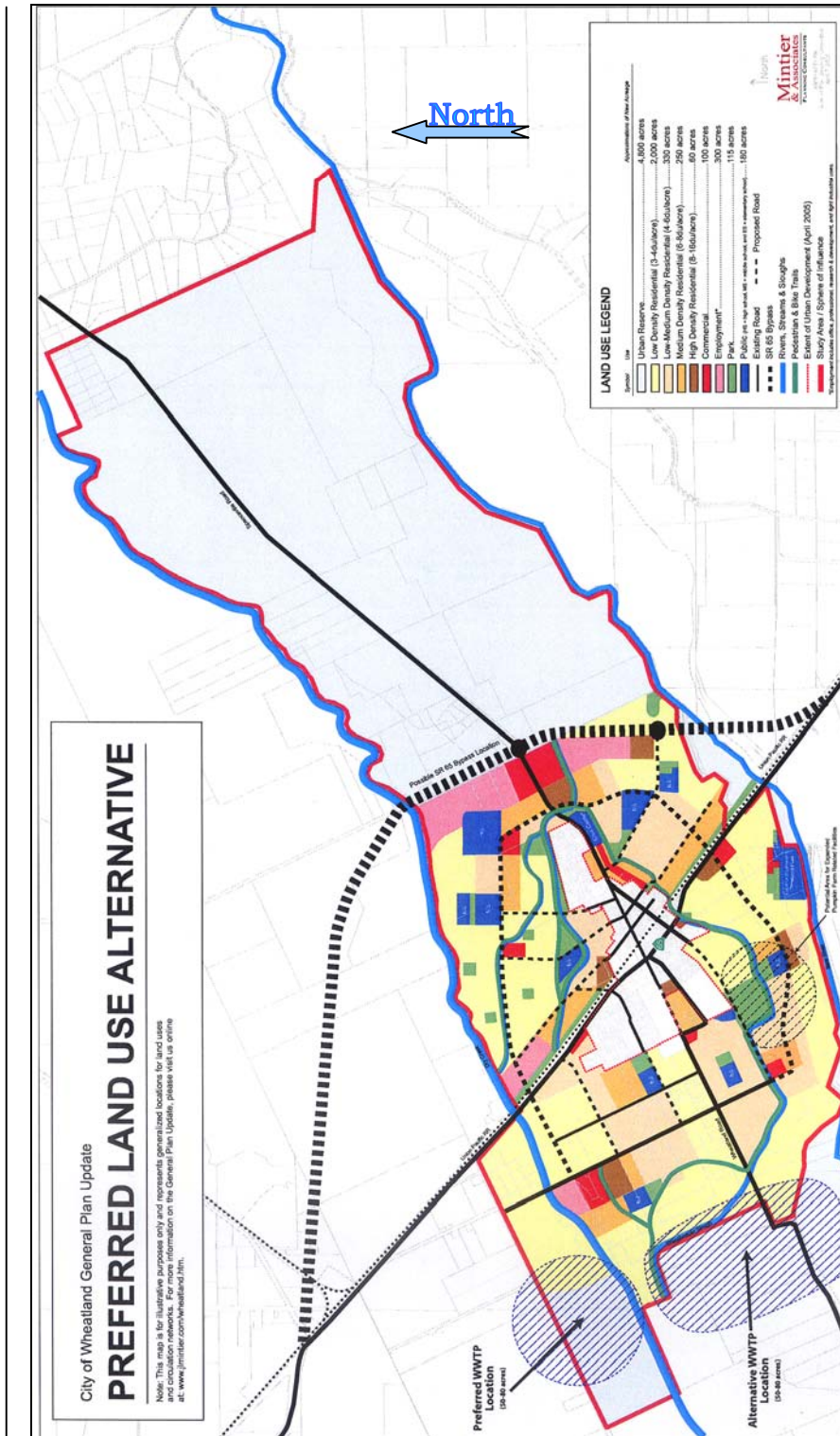
**Table 1-17 Wheatland in comparison to Yuba County and Marysville**

|                             | Population <sup>1</sup> | Housing <sup>1</sup> | Persons Per Household <sup>1</sup> |
|-----------------------------|-------------------------|----------------------|------------------------------------|
| County of Yuba <sup>2</sup> | 47,646                  | 17,165               | 3.040                              |
| City of Marysville          | 12,512                  | 5,005                | 2.537                              |
| City of Wheatland           | 2,689                   | 945                  | 2.958                              |
| Total                       | 62,847                  | 23,115               | 2.924                              |

<sup>1</sup> Source CA Dept of Finance E5 Estimates dated 1-1-03,

<sup>2</sup> Unincorporated Development Activity

Figure 1-6 Preferred Land Use, Wheatland General Plan Update



**Table 1-18** Developments in the City Of Wheatland (June 2005, from Yuba/Sutter Economic Development Corporation)

| Sector                     | Location   | Project  | Stage of Development |
|----------------------------|--|--|----------------------|
| Commercial                 | NW corner of SR 65 and McDevitt Dr.                              | Settlers Village, 45560 sf   | Planned              |
| Residential                | North of the terminus of E Street and Nichols Drive              | Nichols Ranch Residential & Commercial project - 485 ac            | Planned              |
| Residential                | North of Wheatland Ranch   | Powell Estates - 100 ac  | Planned              |
| Residential                | South of Jones Ranch   | JTS Communities - 179 ac   | Planned              |
| Residential                | West of Almond Estates. North and south of Wheatland Road        | Wheatland Ventures LLC - 285 ac                                    | Planned              |
| Residential                | Southwest of Jones Ranch   | C. W. Stineman & Sons – 100 ac                                     | Planned              |
| Residential                | West of Heritage Oaks  | James Sohrakoff - 99 ac  | Planned              |
| Residential                | Southside of Wheatland Road between High School and ACE Hardware | Jones Ranch - 552 units on 191 ac                                  | Permitted            |
| Residential/<br>Commercial | Westside of SR 65 between Main St. and Bear River                | Heritage Oaks Estates - 778 units & 120,000 sf commercial - 234 ac | Permitted            |
| Residential                | Westside of SR 65, north of Evergreen Dr                         | Almond Estates - 169 units- 45.5 ac                                | Permitted            |
| Residential                | McDevitt Dr & Spruce Ave   | Park Place - 201 units - 52.46 ac                                  | Completed            |
| Residential                | Rose Avenue and Star Ct/Wolf Ct                                  | Premier Grove - 49 units -9.9 ac                                   | Completed            |
| Residential                | North side of Main Street at McCurry Street                      | Wheatland Ranch 188 units - 47.06 ac                               | Completed            |
| Residential                | NE of Wheatland  | Wilson Ranch, 1,500 ac   | Planned              |
| Education                  |  | Bear River Middle School<br>940 Students                           | Planned              |

Source: Yuba Sutter Economic Development Corporation <http://www.ysedc.org/>

### 1.3.13 Flooding and Route closure

Temporary closures of SR 65 occurred approximately 41 times between 1980 and 2003 due to maintenance activities (4 times), flooding (7 times), vehicle collisions (24 times), railroad maintenance/derailment (2 times), and 4 times for other miscellaneous activities.

The proposed route goes through areas subject to flooding. Flooding has occurred within the city limits of Lincoln, primarily around Sixth Street during the flooding in

1990, 1995 and 1997. While this project would not prevent flooding in the town of Lincoln, it would provide an alternative route in the event that the existing SR 65 is closed again due to flooding. The proposed project will be designed and constructed with the flooding potential in mind to avoid the possibility of a flood closure on the bypass. See Section 4.8 in Chapter 4 for more information on floodplain encroachment.

**Table 1-19 Route Closures**

| <b>Postmile</b> | <b>Location</b>                                 | <b>Reason</b>                                | <b>Duration of Closure</b> |
|-----------------|---|--|----------------------------|
| 9.5/12.8        | Sunset and Industrial Ave.                      | Pipe bomb                                    | 1.3 hours                  |
| 9.5/12.9        | Between Placer Blvd. and Industrial Avenue      | Accident-eight fatalities                    | 4 hours                    |
| 9.5/13.0        | Sunset Blvd. to Industrial Ave.                 | Road rehabilitation                          | 2.5 hours                  |
| 9.5/13.7        | Sunset to SR 193                                | Flooding                                     | 6.75 hours                 |
| 12.0            | One mile north of Lincoln                       | Accident                                     | 0.5 hour                   |
| 12.3            | One mile south of Lincoln                       | Truck accident, two fatalities               | 3.2 hours                  |
| 12.8            | South of Lincoln                                | Accident- one fatality                       | 3 hours                    |
| 12.8            | Industrial Avenue                               | Accident-two fatalities                      | 0.5 hour                   |
| 13.1            | Moore Rd.                                       | Flooding                                     | 1.4 hours                  |
| 13.1            | Moore Rd.                                       | Accident-one fatality                        | 2.5 hours                  |
| 13.1            | Moore Rd.                                       | Accident                                     | 1.1 hours                  |
| 13.4            | 1 <sup>st</sup> St.                             | Accident                                     | 2 hours                    |
| 13.4            | 1 <sup>st</sup> St.                             | Truck accident                               | 2 hours                    |
| 13.7            | Junction of SR 193                              | Truck accident                               | 1.25 hours                 |
| 13.7            | Junction of SR 193                              | Drill testing. Planned closure               | 12 hours                   |
| 13.7            | Junction of SR 193                              | Flooding                                     | 2.5 hours                  |
| 13.8/14.0       | Between 4 <sup>th</sup> and 5 <sup>th</sup> St. | Filming a movie                              | 5.5 hours                  |
| 13.8/14.0       | Between 4 <sup>th</sup> and 5 <sup>th</sup> St. | Southern Pacific RR realigning a spur track. | 6.75 hours                 |
| 13.8            | 5 <sup>th</sup> St.                             | Hazardous waste spill                        | 7.5 hours                  |
| 13.8            | 5 <sup>th</sup> St.                             | Ruptured water main.                         | 1.1 hours                  |
| 13.9            | 6 <sup>th</sup> St.                             | Flooding                                     | 4.5 hours                  |
| 13.9            | 6 <sup>th</sup> St.                             | Flooding                                     | 3.75 hours                 |
| 13.9            | 6 <sup>th</sup> St.                             | Flooding                                     | 2.25 hours                 |
| 14.4            | Gladding Rd.                                    | Accident                                     | 0.5 hour                   |
| 14.4            | Gladding Rd.                                    | Accident –one fatality                       | 2.75 hours                 |
| 17.3/21.6       | 3-7 miles south of Lincoln                      | Accident, two fatalities                     | 1.6 hours                  |
| 20.9/21.7       | Sheridan Rail Road crossing                     | Train derailment                             | 2.5 hours                  |
| 21.5            | Bear River Bridge                               | Accident                                     | 1.3 hours                  |
| 21.6            | South of Sheridan                               | Four vehicle accident                        | 1.5 hours                  |
| 22.9            | 2 miles south of Wheatland                      | Accident, one fatality                       | 1 hour                     |
| 23.4            | South Beale Rd.                                 | Major flood in Linda                         | 16.3 hours                 |

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## 2 PROPOSED ALTERNATIVES

Using comments from the City of Lincoln, Placer County, the Resource Agencies including U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service (FWS) and U.S. Army Corps of Engineers (ACOE) and the community, Caltrans and FHWA developed numerous alternatives to meet the transportation needs of the community while preserving the natural habitat of the area. The preferred alternative (D13 North Modified) was selected based on the extent to which the project met the stated purpose and need, design standards, public input, comparison of the environmental impacts, comments received at the public hearing and by correspondence and is the least environmentally damaging practicable alternative.

The Draft environmental document considered seven alternatives: the “No Build” and six “Build Alternatives”: A5C1, AAC2, D1, D13, D13 South Modified and D13 North Modified. Considerable effort went into designing a facility that minimized impacts to the wetland areas and residences while providing adequate relief from traffic congestion and improving inter-regional movement of goods and services.

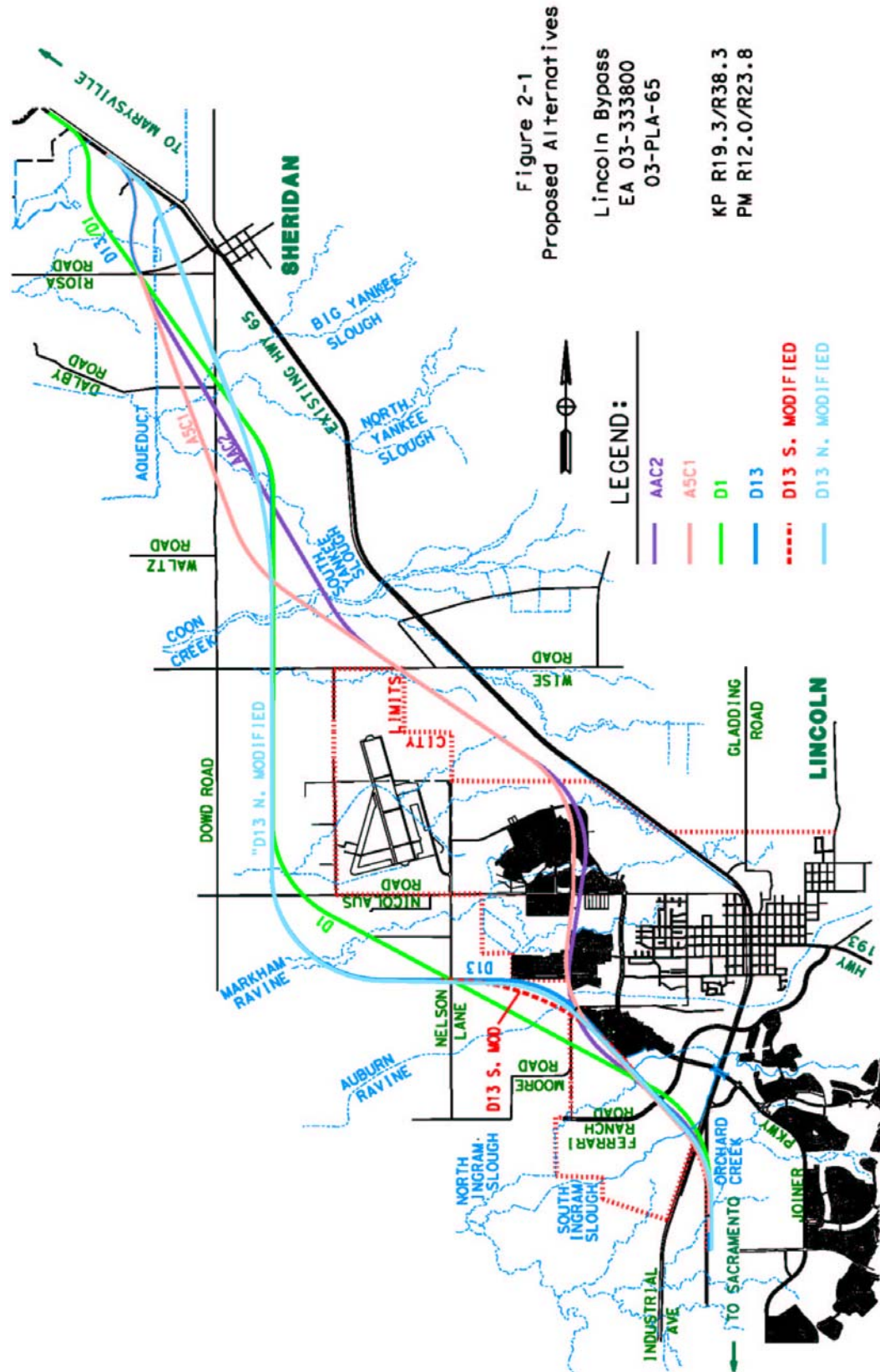
The following screening criteria considered necessary to achieve the project’s purpose and need were developed in cooperation with the FWS, the ACOE and the EPA:

- The project should improve service levels and maintain, at a minimum, LOS D in the project area through the year 2025.
- The project should improve and maintain traffic and pedestrian safety in the project area.
- The project should minimize displacement of existing residences and businesses.
- The project should minimize impacts to wetlands and listed species.
- The project should be constructed at a reasonable cost.

The alternatives discussed below and shown in Figure 2-1 were developed with these screening criteria in mind. A full range of alternatives that included a highway bypass, non-highway options or improving the existing alignment through the City of Lincoln were investigated through the Major Investment Study (MIS). Some of these approaches either did not meet the project's purpose or need, or did not meet some or all of the screening criteria. These alternatives are described in the section labeled “Alternatives Withdrawn From Consideration” which follows this section.



Figure 2-1 Draft EIS/R Proposed Alternatives





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## 2.1 ANALYZED ALTERNATIVES

Seven alternatives were evaluated and described in the Draft EIS/R, the “No Build,” AAC2, A5C1, D1, D13 and D13 South Modified and D13 North Modified. The alternatives are described below and shown on Figure 2-1, Proposed Alternatives. Ten more were briefly described but rejected in the Draft EIS/R, they are described in Section 2.2, at the end of this chapter. Below are brief descriptions of the alternatives evaluated in the Draft EIS/R and the reason they were not chosen as the preferred alternative. Table 2-4 summarizes the impacts each alternative has on land use, wetlands, natural resources and right-of-way impacts as well as compares the cost of each alternative.

### 2.1.1 No Build

The “No Build” alternative would be to not build the project. However, routine maintenance and operational improvements would continue. If the “No Build” alternative were chosen, congestion would continue in the City of Lincoln. The Level of Service would continue to deteriorate to a LOS F within the city limits.

The new development occurring south and southwest of Lincoln that is currently approved will be built whether or not the bypass is constructed. With the additional development, traffic is expected to almost double by the year 2025. For more information on existing and future traffic, please see Chapter 1, Section 1.3.2.

The “No Build” alternative does not address the purpose and need of the project. Congestion will increase as the area develops. The already high accident rate can be expected to rise as congestion increases. Regional trips will be increasingly delayed and the level of service will decrease.

Two additional road connections between Industrial Avenue and Auburn Ravine included in the City’s General Plan, Ferrari Ranch Road and Lincoln Parkway, will provide access to newly developing areas. These connections will also result in a lower level of service on the existing facility.

### 2.1.2 AAC2 and A5C1

The combined A and C corridor alternatives begin approximately 0.5 km (0.3 mi) south of Industrial Ave. The alignments curve in a northwesterly direction and proceed over Industrial Ave. and the Union Pacific Rail Road (UPRR) tracks. The alignments create cul-de-sacs at Moore Road. The alignments then turn in a northeasterly direction approximately 2.4 km (1.5 mi) west of the existing SR65.

Near Nicolaus Road, the AAC2 and A5C1 alignments are located east of Lakeside Dr. by approximately 335 m (1100 ft) and 230 m (750 ft), respectively. From Nicolaus Road, the AAC2 and A5C1 alignments continue along Corridor AC on a north-northeast

bearing until the point where they were near the UPRR tracks. At this location, the alignments curve to the west.

The A5C1 and AAC2 alternatives share the same alignment for approximately 2.5-km (1.6 mi). Just south of Coon Creek, the AAC2 alignment stays roughly parallel with existing SR65, while the A5C1 alignment veers northwest for about 1470 m (4800 ft), then veered north, eventually merging with the AAC2 alignment at Riosa Road. These alignments continue north where they tie back into the existing facility approximately 2 km north of Sheridan. The A5C1 has less right-of-way impact on the farmland north of Wise Road than alternative AAC2. Under these alternatives, right-of-way for future interchanges would have been acquired at Wise and Riosa Roads.

These alternatives provide four lanes from just south of Industrial Avenue to Nicolaus Road. North of Nicolaus Road, the bypass provide 2-lanes up to the northern tie-in with existing SR65 near Sheridan. Industrial Avenue and Nicolaus Road have interchanges and at-grade intersections would be constructed at Wise Road and Riosa Road and an undercrossing at Dowd Road. These alternatives include bridges at Industrial Ave., Ingram Slough, proposed Ferrari Ranch Road, Auburn Ravine, Markham Ravine, Coon Creek, Yankee Slough, Big Yankees Slough and the SSWD Aqueduct.

The disadvantage of the AC alignments is that they go through areas supporting high quality vernal pools. In addition, since these alternatives were developed, numerous housing developments have been constructed in the path of these alternatives. An additional 461 to 469 residents would have been directly impacted. In addition to increased impacts on local residents, there would have been the associated increase in right-of-way costs and possible soundwalls.

### **2.1.3 D1 Alternative**

The D1 alternative begins at the same location south of Industrial Avenue as the AC alignments. The alignment crosses the railroad tracks and turns in a northwesterly direction, proceeding to the west side of the Lincoln Airport. From near Auburn Ravine to west of the airport, the D1 alignment passes through an area of scattered single-family dwellings. This alignment would require five to ten residential acquisitions and may be sufficiently close to as many as ten other residences requiring soundwalls for noise abatement.

West of the airport near Nicolaus Road, the D1 alignment veers north towards Waltz Road. After Waltz Rd., the D1 alignment turns northwesterly towards Sheridan, parallel to and about 610 m (2000 ft) west of the existing SR 65. North of Sheridan, the D1 alignment would connect with the existing SR 65 west of the railroad tracks. This would avoid crossing the railroad tracks at the north end of the proposed bypass.

Under this alternative, right-of-way for future interchanges would be acquired at Nelson Lane, Wise Road and Riosa Road. The Nelson Lane Interchange would serve

Lincoln Airpark and Nelson Lane would need to be improved at a local cost to handle the increased traffic.

Initially, this alternative would provide four lanes from just south of Industrial Avenue to Nelson Lane. North of Nelson Lane, the bypass would provide 2-lanes up to the northern tie-in with existing SR65 near Sheridan. Industrial Avenue would be a partial interchange and at-grade intersections would have been constructed at Nelson Lane, Wise Road and Riosa Road. This alternative would have included an undercrossing at Dowd Road and overcrossing at Nicolaus Road. This alternative also would have included bridges at Industrial Ave., Ingram Slough, proposed Ferrari Ranch Road, Auburn Ravine, Markham Ravine, Coon Creek, Yankee Slough, Big Yankees Slough and the SSWD Aqueduct.

The D1 alternative was eliminated due to higher impacts on high value marsh, additional residents and businesses would be affected, and negative public response from the Rockwell Lane community.

#### **2.1.4 D13 Alternative**

The D13 alignment was developed in response to public reaction to the D1 alignment impacts to residences on Rockwell Lane and in an effort to reduce impacts to wetlands at the south end of the bypass. The D13 Alternative begins 0.5 km (0.3 mi) south of the intersection of existing SR65 and Industrial Avenue at approximate kilometer post 19.9 (PM R12.4). This alignment deviates from existing SR65 just south of its intersection with Industrial Avenue. Crossing over Industrial Avenue and the Union Pacific Transportation Company's tracks, the D13 alignment proceeds in a westerly direction. The alignment bisects Moore Road and intersects Nelson Lane before turning to the north crossing Nicolaus Road and passing the Lincoln Airport to the west. The alignment continues in a northerly direction for approximately 5.6 km (3.5 mi) parallel to Dowd Road before swinging in the northwest direction, crossing Dowd Rd approximately 91.4 m (300 ft) north of Dalby Road. Continuing in a northwest direction, the alignment intersects Riosa Road and rejoins the existing SR65 0.2-km (0.1 mi) south of the Bear River. The D13 alignment measures 20.6 km (12.8 mi) in total length.

As in the D1 alternative, right-of-way for future interchanges would be acquired at Nelson Lane, Wise Road and Riosa Road. The Nelson Lane Interchange would have served the Lincoln Airpark; therefore, Nelson Lane would have needed to be reconstructed to handle the increased traffic.

Initially, this alternative would provide four lanes from just south of Industrial Avenue to Nelson Lane. North of Nelson Lane, the bypass would provide 2-lanes up to the northern tie-in with existing SR65 near Sheridan. Industrial Avenue would be a partial interchange and at-grade intersections would have been constructed at Nelson Lane, Wise

Road and Riosa Road. This alternative would include an undercrossing at Dowd Road and overcrossing at Nicolaus Road. This alternative would include bridges at Industrial Ave., Ingram Slough, proposed Ferrari Ranch Road, Auburn Ravine, Markham Ravine, Coon Creek, Yankee Slough, Big Yankees Slough and the SSWD Aqueduct.

The D13 alternative was not chosen as the preferred alternative due to impacts to the USDA Wetland Conservation Easement near Sheridan. In addition, higher impacts to marsh, agricultural land and businesses would occur.

### **2.1.5 D13 South Modified**

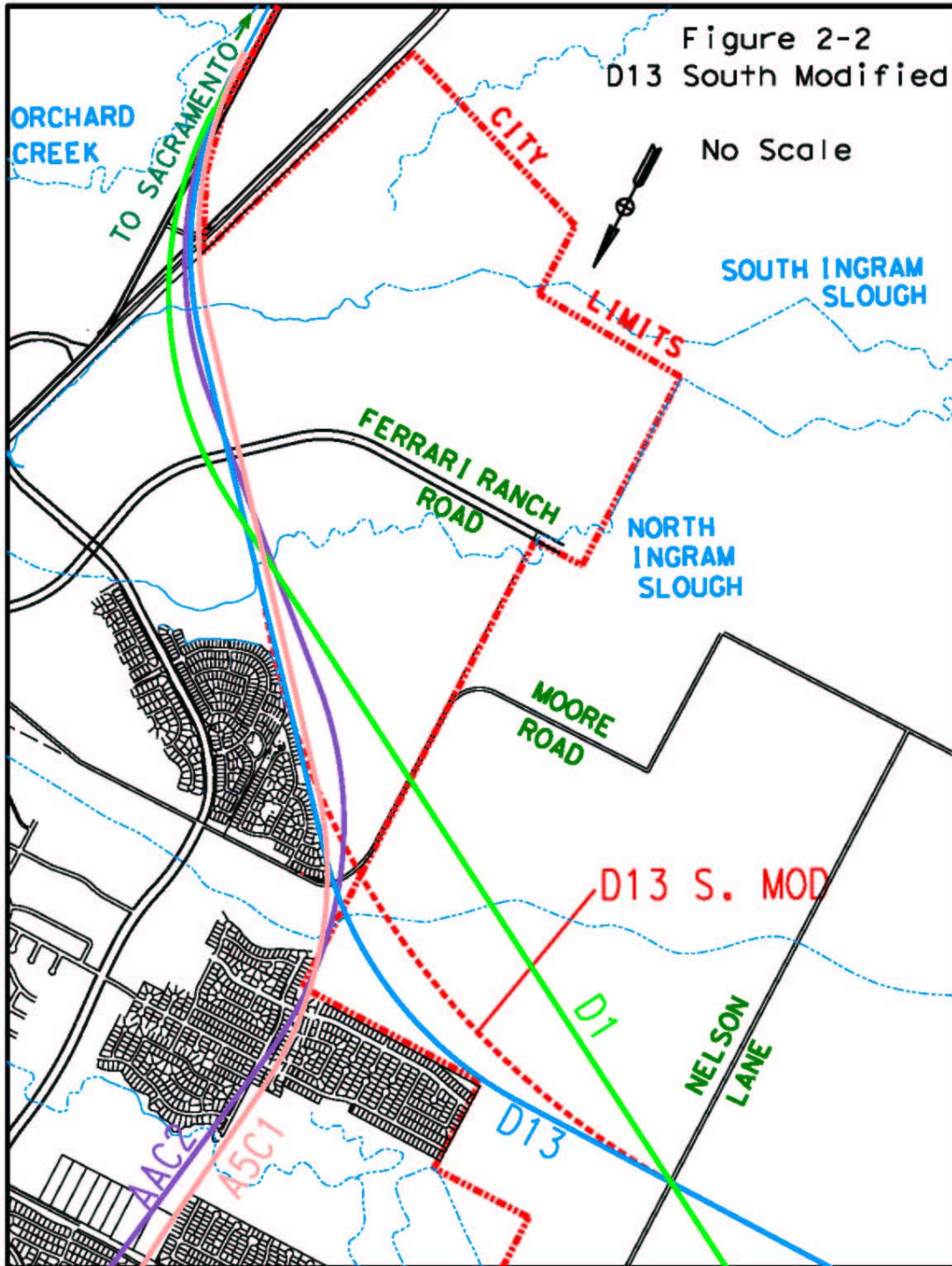
The D13 South Modified was developed in response to the open house of September 22, 1999. Area citizens proposed a plan that would move the D13 alternative further away from the residential development located near Auburn Ravine and First Street. The proposal required using the D1 alignment from Industrial Avenue to Nelson Lane and D13 from Nelson Lane to the end of the project. This public proposal was presented to the City of Lincoln. The Project Development Team (PDT) decided to maintain the D13 alignment along this development up to the vicinity of Moore Road. From this point, this alignment separates from D13 to the southwest and ties back in to the D13 alignment just west of Nelson Road. (See Figure 2-2)

The D 13 South Modified was developed to move the D13 alignment away from the Brookview and Park Estates subdivisions. Consequently, by moving the alignment away from the subdivision, several structures and homes at and near a working ranch would have been affected.

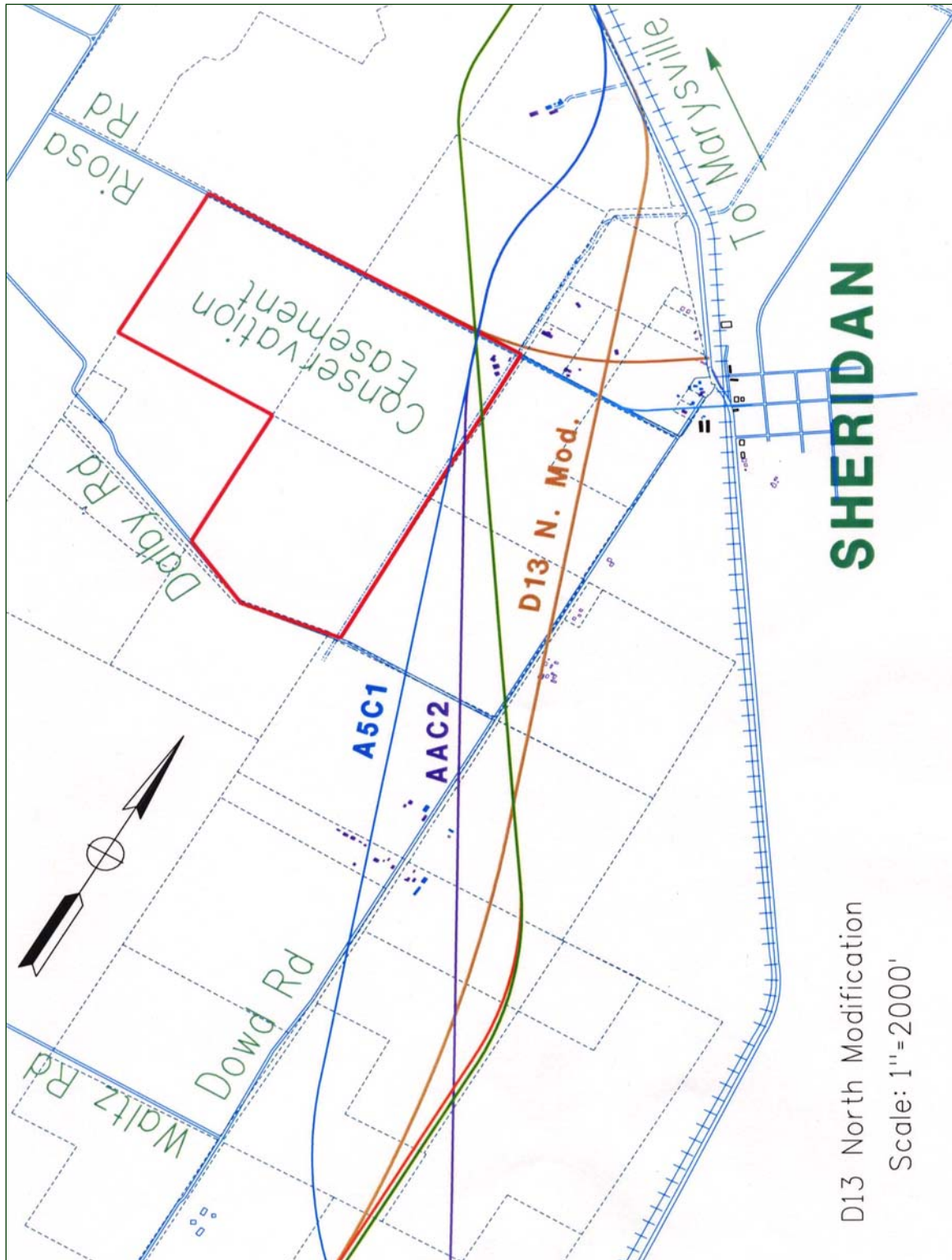
Initially, this alternative would provide four lanes from just south of Industrial Avenue to Nelson Lane. North of Nelson Lane, the bypass would provide two lanes up to the northern tie-in with existing SR65 near Sheridan. Industrial Avenue would be a partial interchange and at-grade intersections would be constructed at Nelson Lane, Wise Road and Riosa Road. This alternative includes an undercrossing at Dowd Road and overcrossing at Nicolaus Road. This alternative also has bridges at Industrial Avenue, Ingram Slough, proposed Ferrari Ranch Road, Auburn Ravine, Markham Ravine, Coon Creek, Yankee Slough, Big Yankees Slough and the SSWD Aqueduct.

This alternative was eliminated due to the impact on the USDA Wetland Conservation Easement property and increased impacts to waters of the US and wetlands.

Figure 2-2 D 13 South Modified



**Figure 2-3 D 13 North Modified**



### **2.1.6 D13 North Modified (Preferred Alternative)**

The D13 North Modified alternative begins approximately 0.5 km (0.3 mi) south of the intersection of existing SR65 and Industrial Avenue at kilometer post 19.3 (PM R12.0). This alignment deviates from the existing SR65 just south of its intersection with Industrial Ave. Crossing over Industrial Avenue and the Union Pacific Transportation Company's tracks, the Preferred Alignment proceeds in a westerly direction. The alignment bisects Moore Road and intersects Nelson Lane before turning to the north crossing Nicolaus Road and passing the Lincoln Airport to the west. The alignment continues in a northerly direction for approximately 5.6 km (3.5 mi) parallel to Dowd Road before swinging in the northwest direction crossing Dowd Road approximately 91 m (300 ft) north of Dalby Road. Continuing in a northwest direction, the alignment intersects Riosa Road and rejoins existing SR65 just south of the Bear River at KP 38.3 (R23.8). The total length of the D13 North Modified alignment is approximately 20 km (12.4 mi).

Phase 1 of this alternative would provide four lanes from just south of Industrial Avenue to just north of North Ingram Slough. North of North Ingram Slough, the bypass would provide two lanes up to the northern tie-in with existing SR65 near Sheridan. Industrial Avenue would be a partial interchange, and at-grade intersections would be constructed at Nelson Lane, Wise Road and Riosa Road. This alternative has an overcrossing at Nicolaus Road and contains bridge structures at UPRR/Industrial Avenue, South Ingram Slough, proposed Ferrari Ranch Road, North Ingram Slough, Auburn Ravine, Markham Ravine, Airport Creek, Coon Creek, South Yankee Slough, North Yankee Slough and Big Yankee Slough.

As funding becomes available, additional lanes will be constructed and intersections will become interchanges. The ultimate project is scoped as a four-lane freeway from Industrial Avenue to SR 65 at Sheridan, with interchanges Industrial Avenue, Nelson Lane, Wise Road and Riosa Road. Overpasses will be constructed at Nicolas Road and cul de sacs will be constructed at Moore Road and Dowd Road.

#### **Floodplain Easement**

A 32.4 ha (80 ac) floodplain easement is proposed for the northeast quadrant of the Wise Road intersection. This easement will allow the road to be constructed at a lower profile, saving the cost of additional fill. The floodplain easement will also prevent any development from occurring in that area.

#### **Coon Creek (LEDPA) Conservation Easement**

A number of concepts were considered to avoid potential indirect and secondary impacts to aquatic resources caused by the intersection and later the interchange at Wise Road to the Coon Creek Watershed. Conservation Easements in the Coon Creek



watershed equivalent to the approximate cost of constructing the overcrossing structure at Wise Road; approximately \$3.9 million, were included in the project to address these concerns.

### **Discussion of the Preferred Alternative**

All reasonable alternatives were developed to a comparative level of detail so their relative merits may be evaluated. After reviewing public comments and coordinating with the regulatory agencies and the City of Lincoln it was determined that the D13 North Modified alternative, which includes conservation easements, was the LEDPA and therefore has been identified as the preferred alternative.

An Alternatives Analysis based on the earlier alignments; AA, A5, AAC2, A5C1, D1 and D13, was completed in 1998 in accordance with the Section 404 (b)(1) Guidelines and the NEPA/404 Integration Process. The purpose of the analysis was to evaluate the reasonableness and practicability of a number of alternatives for meeting the objectives of the project and provide documentation for the preparation of the Section 404 permit. The Section 404 (b)(1) Guidelines require that this analysis be adequate to identify the “Least Environmentally Damaging Practicable Alternative” (LEDPA). This was accomplished by comparing the alternatives for practicability, project purpose and overall environmental effects.

Upon analysis, the D corridor alignments are less damaging than the A/C alignments due to the presence of high quality wetlands and within the AC corridor, and the D13 is less damaging than the D1 due to increased wetland impacts. None of these three alternatives, the D1, D13 and D13 North Modified were clearly superior with regards to impacts to wetlands. However, the D 1 and D13 both impacted property that is under the USDA Wetland Conservation Easement.

Further information on the alignments was provided to the regulatory agencies in mid 2003 to advance the LEDPA and to identify a preferred alternative. D13 North Modified which includes conservation easements was accepted as the LEDPA by the regulatory agencies and has since gone through further design refinements and has received a “non jeopardy, no adverse modification of critical habitat,” Biological Opinion from FWS under Section 7 of the Endangered Species Act. (See Appendix J)

### **Wetland Impacts**

Preliminary design information was used to compare the alternatives before obtaining EPA, FWS and the USACE’s concurrence on the LEDPA. The application of USFWS guidelines and recommendations regarding direct and indirect impacts was applied which resulted in higher impacts on the preferred alternative. All of the other alternatives would have similar increased impacts to natural resources with these revisions. Only those impacts that have changed are listed in Table 2-1.



**Table 2-1 D13 Alternative Impacts**

| <b>Alternative</b>                            | <b>Wetland Impacts</b>                | <b>Vernal Pool Impacts</b>  | <b>Oak Woodland</b> | <b>Residents affected</b> |
|---|---------------------------------------|---|---------------------|---------------------------|
| <b>D 13</b>                                   | 5.3 ha (13.1 ac)<br>4.73 ha (11.7 ac) | 2.2 ha (5.4 ac)<br>2.14 ha (5.3ac)  | 4.45 ha (11.0 ac)   | 10                        |
| <b>D 13 South Modified</b>                    | 5.91 ha (14.6 ac)                     | 3.28 ha (8.1 ac)  | 1.17 ha (2.9 ac)    | 10                        |
| <b>D 13 North Modified</b>                    | 5.5 ha (13.6 ac)                      | 2.23 ha (5.5 ac)  | 4.45 ha (11.0 ac)   | 12                        |
| <b>D 13 North Modified (Design Revisions)</b> | 6.54 ha (16.15 ac)                    | *Direct Impacts<br>10.9 ha (26.9 ac)<br>*Indirect Impacts<br>8.5 ha (21.0 ac) | 5.35 ha (13.22 ac)  | 18                        |

\*These revised impacts are calculated based upon FWS guidelines for determining impacts to vernal pools.

In addition to the permanent impacts, temporary impacts that will occur during construction are as follows:

- Vernal and freshwater marsh habitats: 0.04 ha (0.09 ac)
- Other non-wetland waters: 0.15 ha (0.36 ac)
- Mixed riparian forest habitats: 1.52 ha (3.76 ac)

The application of FWS methodology that was applied to the LEDPA caused some of the increase in impacts to vernal pools (habitat for vernal pool fairy shrimp). Under the initial methodology, if a vernal pool was partially within the project footprint and partially outside of the footprint, the portion that was within the direct project impact area was calculated as being directly impacted and the area outside of the project footprint was calculated as indirectly impacted. In addition, vernal pools within a 250-foot buffer on either side of the project limits were calculated as being indirectly impacted (according to FWS guideline interpretation). However, once this original impact calculation was submitted to FWS during the Section 7 consultation, FWS requested that the calculations be further revised according to their guidelines. Consequently, any vernal pool partially impacted by the project is now considered directly impacted and vernal pools that are hydrologically connected are now considered indirectly impacted even if they are beyond the original 250-foot indirect buffer area.

Wetlands and vernal pools were found to be present throughout the project area. The cumulative and indirect impacts of the project were similar for all of the initial project alternatives, although the Preferred Alignment was the only one that did not require the acquisition of property that is under the USDA Wetlands Conservation Easement in the USDA Wetlands Reserve Program.

## 2.1.7 Features of the D13 North Modified

### Structures

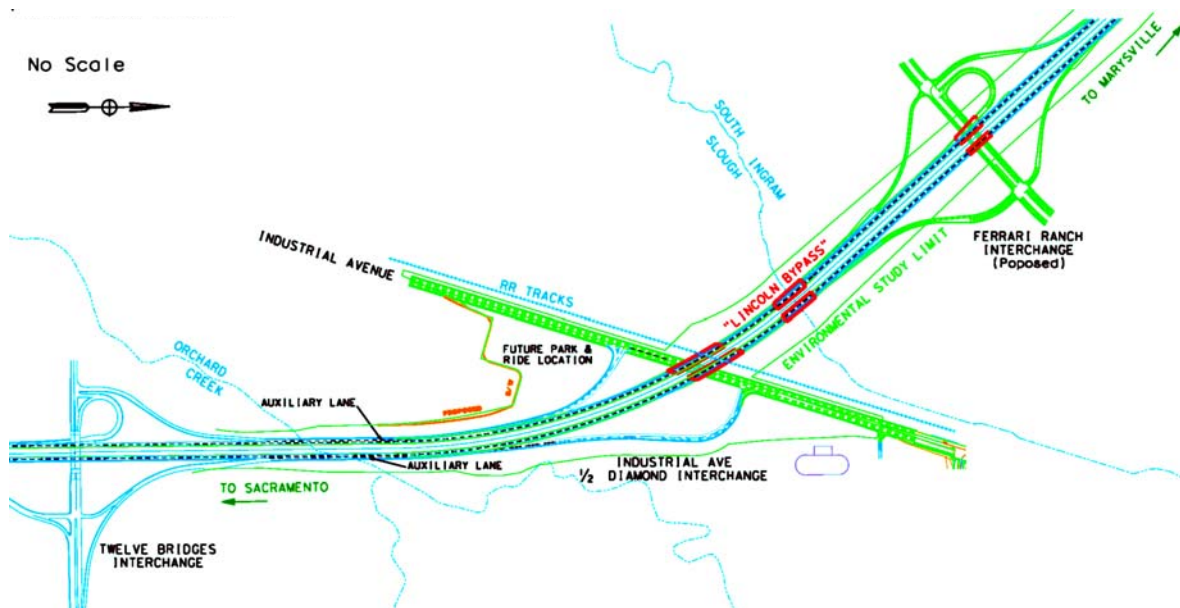
The following table lists the structures that will be required for this project.

**Table 2-2 Structures**

| Bridge Name                    | Bridge Length (meters) | Bridge Length (feet) |
|--------------------------------|------------------------|----------------------|
| Industrial Ave UC and OH Right | 116.7                  | 383                  |
| Industrial Ave UC and OH Left  | 118.5                  | 388.80               |
| S. Ingram Slough Bridge Right  | 69.3                   | 227.37               |
| S. Ingram Slough Bridge Left   | 68.2                   | 223.76               |
| Auburn Ravine Bridge           | 166                    | 545                  |
| Markham Ravine Bridge          | 72                     | 236.23               |
| Nicolaus Road OC               | 79.7                   | 261.55               |
| Airport Creek Bridge           | 15                     | 49.22                |
| Coon Creek Bridge              | 120                    | 393.72               |
| S. Yankee Slough Bridge        | 26.5                   | 86.95                |
| N. Yankee Slough Bridge        | 35                     | 114.84               |
| Big Yankee Slough Bridge       | 48                     | 157.49               |
| Dowd Yankee Bridge*            | 40.5                   | 132.88               |

\*Note: Dowd Yankee Bridge is located on the realigned Dowd Road and spans Big Yankee Slough

**Figure 2-4 Park and Ride**



### Park and Ride

Acquisition of right-of-way near Industrial Avenue and SR 65 for a Park and Ride facility has been included in the project. Caltrans, PCTPA and the City of Lincoln have a MOU regarding the park and ride facility. The acquisition cost responsibility has been transferred to the City of Lincoln and Placer County, who will work together on dedicating the land for the park-and-ride facility. The PCTPA will fund \$1.1 million for

construction capital from Congestion Management Air Quality (CMAQ) or other funding sources. The geometric layout of the Park and Ride facility has been designed although it will not be constructed as part of the bypass project (See Figure 2-4).

Transit service between the proposed Park-and-Ride facility and the nearest Sacramento Regional Transit Light Rail station, with an anticipated “build out” to the Antelope/Sacramento-Placer County line, could provide an important transit link for the residents of Lincoln, Rocklin and Roseville. Yuba-Sutter Transit, Lincoln Transit Service, and Placer County Transit would all consider incorporating the proposed Park-and-Ride facility within their service system when it is built. The convenience and proximity of I-80’s High Occupancy Vehicle lane downstream could be an incentive for the public to use the Park-and-Ride facility to avoid congested mixed flow lanes and eliminate more congestion. The Park-and-Ride facility would be a convenient and logical location for residents to leave vehicles while carpooling/vanpooling or taking transit, removing vehicles from the highway and improving air quality. Caltrans, PCTPA and SACOG are actively pursuing further High Occupancy Vehicle lane development.

While the demand for a park and ride facility extends to Sheridan, the majority of the demand is located in the City of Lincoln; therefore, a single park-and-ride facility location was preferred over multiple facilities. Considering the size and central location of the proposed park and ride site, a single location can more easily be incorporated into the local transit routes and if Sacramento Regional Transit were to decide to extend rail service to the area, this facility could also serve as a possible parking lot for light-rail commuters.

### **Utility Relocation**

Utility conflicts have been identified, however, the relocation of conflicting utilities cannot be initiated until completion of the Project Approval & Environmental Document (PA&ED). After PA&ED, conflict maps will be sent to utility companies. The companies and utilities are shown on Table 2-3 below.

Pacific Gas and Electric (PG&E) gas transmission lines near Dowd and Riosa Roads will require relocation. These lines, 8 inches and 16 inches in diameter, traverse the Lincoln landscape in a southeast to northwest direction. These lines run through portions of new development in Lincoln and continue northwest toward the town of Sheridan where they conflict with the proposed bypass construction. At Dowd road, between Dalby Road and Riosa Road, the project impacts approximately 1,000 linear feet of the 16-inch gas line and approximately 1,700 linear feet of the 8-inch line. It is anticipated that relocation will require the lines to cross the bypass path at an approximate 90 degree angle, continue north in parallel with the bypass where it once again connects with the existing gas lines.

**Table 2-3 Utility Conflicts**

| COMPANY                            | UTILITY                   | LOCATION   |
|------------------------------------|---------------------------|--|
| Pacific Gas & Electric Co.         | Power                     | Various locations throughout project limits      |
| Pacific Gas & Electric Co.         | Gas                       | At Dowd Road, Riosa Road and South of Moore Road |
| AT&T (Formerly SBC & Pacific Bell) | Telephone and Fiber Optic | Various locations throughout project limits      |
| City of Lincoln                    | Water and Sewer           | Within the City of Lincoln jurisdiction          |
| Q-West Communications              | Fiber Optics              | Various locations throughout project limits      |
| Sprint                             | Fiber Optics              | Various locations throughout project limits      |
| Kinder Morgan (Energy Partners)    | Oil                       | Along RR tracks near Industrial Avenue           |
| UPRR                               | Communication lines       | Along Industrial Avenue                          |
| South Sutter Water District        | Aqueduct                  | At Riosa Road                                    |
| Greenfield Communication Inc.      | Telephone and Cable       | South of Moore Road                              |

At just north of Riosa Road near the South Sutter Water District canal, the project will again conflict with approximately 500 linear feet of the 16-inch gas line and approximately 1,100 linear feet of the 8-inch line.

In addition, it is estimated that both lines will require a bore and jack crossing of the Bear River lateral of South Sutter Water District's canal.

### Non-Standard Features

The interchange at Industrial Avenue will be designed as a half diamond interchange. Constructing a full diamond interchange required an at-grade crossing of the railroad tracks for the northbound traffic. The existing and future alignment of Industrial Avenue will remain just east of and parallel to the railroad. To build a northbound on-ramp at the Industrial Ave., a "U" shape northbound on-ramp is needed. This would require a large amount of right-of-way acquisition. This movement will be served by the future Ferrari Ranch Interchange. An analysis performed by Caltrans Traffic Forecasting & Modeling confirmed that without this half diamond interchange the level of service in this section would deteriorate.

A design exception request, regarding minimum distances between two successive ramps or interchanges, may be needed if the City of Lincoln maintains the position and location of their local roads where they intersect with the proposed bypass (e.g. Ferrari Ranch Rd.). The minimum interchange spacing is 1.5 km (1 mi) in urban areas. If the City of Lincoln later proposes to build a new interchange at Ferrari Ranch Road, a design exception regarding this issue would be submitted concurrently with the PSR for that proposed project. The City of Lincoln would also be responsible for the environmental document.

### Phasing of Construction

Because of fierce competition for transportation dollars in Placer County, funding for this project is limited. In order to balance the need for the project and limited

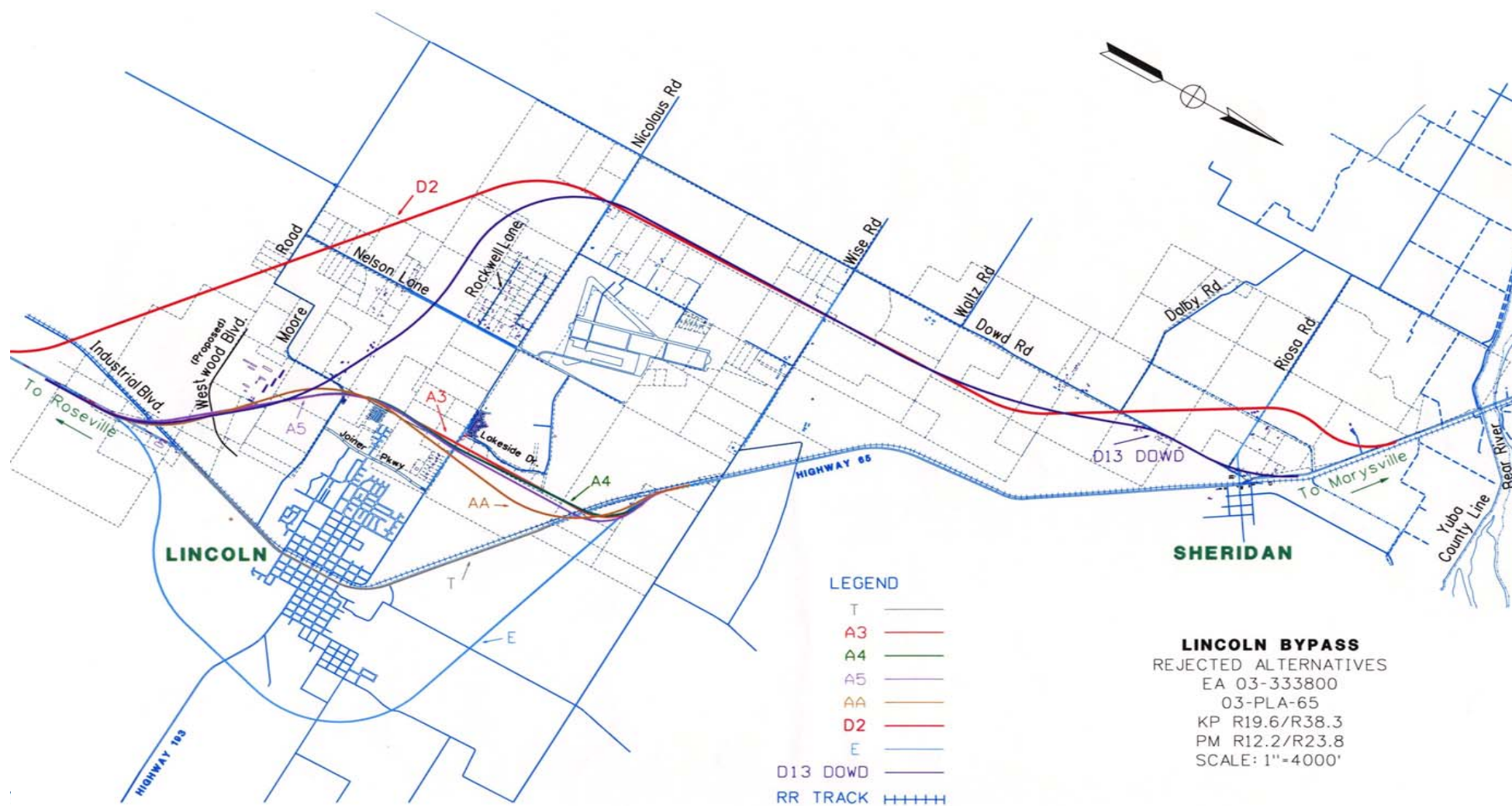
funding, construction will be phased to address the current need, and then as congestion increases, funding will be allotted for the completion of the freeway.

There will be at least two phases to the project. Phase 1 is to construct a four-lane freeway up to just north of Ingram Slough. After Ingram Slough, a two-lane highway will be built to the end of the project. Industrial Avenue will have a partial interchange. At-grade intersections will be built at Nelson Lane, Wise Road and Riosa Road. As funding becomes available, the additional two lanes will be added and intersections will be converted to interchanges.

Table 2-4 Summary of Impacts

|  | A5C1 Alternative  | AAC2 Alternative  | D1 Alternative  | D13 Alternative  | D13 South Modified Alternative  | D13 North Modified Alternative   |
|--|---|---|---|--|---|--|
| <b>Wetlands/ Non-wetland Waters</b>            | 7.85 ha (19.4 ac) wetlands/waters<br>4.65 ha (11.5 ac) vernal pool/swale<br>2.59 ha (6.4 ac) of marsh<br>Two high value vernal pool complexes | 6.23 ha (15.4 ac) wetlands/waters<br>3.80 ha (9.4 ac) vernal pool/swales<br>1.83 ha (4.5 ac) of marsh<br>Two high value vernal pool complexes | 5.30 ha (13.1 ac) wetlands/waters<br>2.43 ha (6.0 ac) vernal pool/swales<br>2.38 ha (5.9 ac) of marsh<br>One high value marsh | 4.73 ha (11.7 ac) wetlands/waters<br>2.14 ha (5.3 ac) vernal pools/swales<br>2.22 ha (5.5) ac of marsh<br>One high value marsh | 5.91ha (14.6 ac) wetlands/waters<br>3.28 ha (8.1 ac) vernal pool/swales<br>2.22 ha (5.5 ac) marsh               | 5.50 ha (13.6 ac) wetlands/waters<br>2.23 ha (5.5 ac) vernal pools/swales<br>2.95 ha (7.3 ac) of marsh           |
| <b>Special Status Species</b>                  | Vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Swainson's hawk                                      | Vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Swainson's hawk                                      | Vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Swainson's hawk                      | Vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Swainson's hawk                       | Vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Swainson's hawk        | Vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, Swainson's hawk         |
| <b>Natural Communities Wildlife, Fisheries</b> | 93.68 ha (231.5 ac) grasslands containing vernal pools<br>2.06 ha (5.1 ac) riparian forest<br>6.11 ha (15.1 ac) oak woodland                  | 88.18 ha (217.9 ac) grasslands containing vernal pools<br>1.05 ha (2.6 ac) riparian forest<br>10.16 ha (25.1 ac) oak woodland                 | 76.01 ha (187.8ac) grasslands containing vernal pools<br>1.13 ha (2.8 ac) riparian forest<br>0.4 ha (1.0 acre) oak woodland   | 70.05 ha (173.1 ac) grasslands containing vernal pools<br>1.21 ha (3.0 ac) riparian forest<br>3.28 ha (8.1 ac) oak woodland    | 76.65 ha (189.4 ac) grassland/ vernal pool<br>1.05 ha (2.6 ac) riparian forest<br>0.08 ha (0.2 ac) oak woodland | 80.98 ha (200.1 ac) grassland/ vernal pool<br>1.213 ha (3.0 ac) riparian forest<br>3.28 ha (8.6 ac) oak woodland |
| <b>Water Quality</b>                           | 202.92 ha (501.4 ac) footprint with 11 stream crossings   | 196.20 ha (484.8 ac) footprint with 11 stream crossings   | 195.79 ha (483.8 ac) footprint with 9 stream crossings  | 213.88 ha (528.5 ac) footprint with 9 stream crossings   | 210.28 ha (519.6 ac) footprint with 9 stream crossings  | 214.69 ha (530.5 ac) footprint with 9 stream crossings   |
| <b>Cultural Resources</b>                      | Requires small amount of right-of-way from property eligible for National Register.   | Requires small amount of right-of-way from property eligible for National Register. Impacts to recorded archeological site                    | Requires small amount of right-of-way from property eligible for National Register.   | Requires small amount of right-of-way from property eligible for National Register.  | Requires small amount of right-of-way from property eligible for National Register.                             | Requires small amount of right-of-way from property eligible for National Register.                              |
| <b>Section 4(f) Use</b>                        | Yes, <i>de minimis</i>  | If the archaeological site were determined to require preservation in place, then this alternative would affect a Section 4(f) property.      | Yes, <i>de minimis</i>  | Yes, <i>de minimis</i>   | Yes, <i>de minimis</i>  | Yes, <i>de minimis</i>   |
| <b>Agricultural Land</b>                       | 52.17 ha<br>128.9 ac  | 51.1 ha<br>126.3 ac   | 84.4 ha<br>208.5 ac   | 102.11ha<br>252.2ac  | 92.84ha<br>229.4ac  | 94.74ha<br>234.1ac   |
| <b>Hazardous Waste</b>                         | Potential   | Potential   | Potential   | Potential  | Potential   | Potential  |
| <b>Land Use/ Socio-economics</b>               | Residences: 461<br>Businesses: 5  | Residences: 469<br>Businesses: 2  | Residences: 20<br>Businesses: 6   | Residences: 10<br>Businesses: 3  | Residences: 10<br>Businesses: 1   | Residences: 8<br>Businesses: 3   |
| <b>Cost</b>                                    | \$159 million (min)<br>\$200 million (max)  | \$163 million (min)<br>\$195million (max)   | \$174 million (min)<br>\$205 million (max)  | \$165 million (min)<br>\$196 million (max)   | \$164 million (min)<br>\$195 million (max)  | \$166 million (min)<br>\$197 million (max)   |

Figure 2-5 Alternatives Withdrawn from Consideration



## 2.2 ALTERNATIVES WITHDRAWN FROM CONSIDERATION PRIOR TO CIRCULATION OF DRAFT EIS/R

The following alternatives were eliminated from further consideration for a variety of reasons that are included in the description of each alternative. Figure 2-5 shows the location of these alternatives. Table 2-5 summarizes the alternatives that were reviewed and why they were eliminated from further review.

**Table 2-5 Summary of alternatives withdrawn from consideration in the DEIS/R**

| ALTERNATIVE                            | REASON FOR ELIMINATION  |
|--|---|
| AA                                     | Would not alleviate traffic problems or accommodate future traffic demands. Would have greater impacts to existing and proposed dwellings.                      |
| A5                                     | Would not alleviate traffic problems or accommodate future traffic demands. Would have greater impacts to existing and proposed dwellings.                      |
| A3                                     | Would not alleviate traffic problems or accommodate future traffic demands. Alignment would close existing Lakeside Drive and disrupt existing subdivision.     |
| A4                                     | Would not alleviate traffic problems or accommodate future traffic demands.   |
| D2                                     | Would have greater impacts on dwellings, wetlands and vernal pools than the D1 alternative.   |
| D13 Dowd Modified                      | Eliminated from further consideration due to the non-access controlled segment on Dowd Road, proximity to existing driveways and traffic safety and operations. |
| T                                      | Would fail to meet regional traffic needs. Numerous cross-streets and driveways would remain and traffic congestion would increase.                             |
| E                                      | This alignment would not meet the regional traffic demands and existing traffic patterns.   |
| TSM (Transportation System Management) | The October 1995 Major Investment Study eliminated this alternative from further consideration.   |
| AFD                                    | Would require extensive frontage roads and right-of-way. The 1990 Stage II Project Work Program eliminated this alternative from further consideration.         |

### 2.2.1 The AA and A5 Alternatives

Since the “AA” and “A5” alternatives were first developed, numerous housing developments have been constructed in the path of these alternatives. Consequently, the “A” alternatives impact quite a few more residents than the alternatives in the “D” corridor. Additional soundwalls could be required to protect the residents not directly affected (relocated) by these alternatives.

In addition, the “AA” and “A5” alternatives will not alleviate traffic within the project area as outlined by the Purpose & Need. This is because the “A” corridor ties back into the existing two lane SR 65 near Wise Road, which cannot accommodate the future traffic. Northbound traffic flowing from the “A” alternative must pass through the Wise Road and Riosa Road intersections on existing SR 65. These intersections will need to be controlled with a traffic signal and cannot accommodate the future traffic demand. Traffic on existing SR 65 will become congested. This congestion will



deteriorate to the point that traffic will backup onto the A Bypass alternative. The “D” and “AC” corridors connect back to existing SR 65 north of the Riosa Road intersection and will not be delayed by this intersection. In addition, the “A” alternative has much higher delay and lower speed than the other alternatives.

There are several protected resources that would be affected by these alternatives. The “A” corridor (including AA, A3, A4 and A5) crosses through areas of high quality vernal pools between Nicolaus Road and the Union Pacific Transportation Company (UPTC) railroad tracks. Near the north connection with existing SR 65, Bogg’s Lake hedge hyssop (*Gratiola heterosepala*), a California endangered plant species, has been found. In addition, a mature stand of oak trees is located within the “A” corridor near Nicolaus Road. A pair of nesting Swainson’s hawks, a California threatened species, have been observed nesting in this stand of oaks.

In addition to not meeting the purpose of the project, the “AA” and “A5” alternatives do not meet the design parameters that were agreed upon for this project. The “A5” line impacts excellent quality wetlands near the beginning of the project, as well as an Oak woodland near Nicolaus Road. However, the “A5” line does avoid the California Endangered Bogg’s Lake hedge hyssop, located in vernal pools north of the existing highway. Below is a description of the “AA” and “A5” alternatives.

#### **Alternative AA**

The “AA” line begins approximately 0.5 km (0.3 mi) south of Industrial Avenue at KP 20 (PM12.5). The alignment curves in a northwesterly direction and proceeds over Industrial Ave. and the UPTC tracks, intersecting Moore Road approximately 607 m (1992 ft.) from the Moore Road/Joiner Parkway intersection. The line turns in a northeasterly direction approximately 2.4 km (1.5 mi) west of the existing alignment. At Auburn Ravine, Alternative “AA” is just west of the (USGS topographical map) section line between sections 16 and 17.

At Nicolaus Road, the “AA” line was set approximately 335 m (1100 ft) east of Lakeside Drive. From Nicolaus Road, the “A” line continues on a north-northeast bearing until it nears the UPTC tracks where it curves to the left, proceeds over the railroad tracks and existing SR 65, tying back into the existing highway approximately 0.4 km (0.3 mi) south of Wise Road. The “AA” alignment is approximately 8.0 km (5 mi) long and terminates at KP 28 (PM17.3).

#### **Alternative A5**

The “A5” alternative was created to avoid the Lincoln Airpark in the event it develops before the modified route is adopted. This alternative is 8.05 km (5.0 mi) long, beginning approximately 0.5 km (0.3 mi) south of Industrial Ave. at KP 20 (PM12.5) and ending at KP 28 (PM17.1). The alignment curves in a northwesterly direction and

proceeds over Industrial Ave. and the UPTC tracks. Near the section corner at Moore Road, the line turns in a northeasterly direction approximately 2.4 km (1.5 mi) west of the existing alignment. At Nicolaus Road, the “A5” line is approximately 247 m (810 ft) east of Lakeside Drive and 38 m (125 ft) east of the section line. At the north end of the project this alignment proceeds via grade separation over the railroad tracks and the existing highway, similar to the other “A” alternatives.

### **2.2.2 Alternative A3 and A4**

The “A3” and “A4” alignments were developed to minimize impacts on the biologically sensitive areas in the “A” corridor. This is based on the assumption that the area west of the section line has fewer protected resources than the area east of the section line. The “A3” and “A4” alternatives were dropped in favor of “A5”, which, at the time, affected less residential area.

Alternative “A3” was withdrawn from consideration due to the need to close Lakeside Drive. The City of Lincoln strongly opposes the closure of Lakeside Drive. Closing Lakeside Drive would disrupt the planned subdivision including a loop golf course located just north of the Fairway Dr./Nicolaus Road intersection. Construction of Lakeside Drive was accomplished through an Assessment District. Relocating this road and utilities would alter existing easements and create a complex financial situation

Alternative “A4” removes more of the oak trees near Nicolaus Road than the “A3” line, but substantially less than the “A” line, and wetland impacts are less than the “A” line. The “A4” line has substantially less impact on vernal pools than the A line and also avoids the area where the Bogg’s Lake hedge hyssop is found.

### **A3**

“A3” coincides with the A alignment in the southerly section of the project to Auburn Ravine. There it veers north, running parallel and west of the section line. North of Nicolaus Road, the “A3” line continues on the west side of the section line. The alignment crosses over the railroad tracks and the existing highway, then turns in a northwesterly direction and conforms with existing SR 65.

At Nicolaus Road, the “A3” line is approximately 168 m (551 ft) east of Lakeside Drive. Construction of Nicolaus interchange would require the closure of Lakeside Drive. Alternate access to the Lincoln Airpark could be provided by improving the connection to Fairway Drive located approximately 305 m (1000 ft) west of Lakeside Drive. Improvements to the interior streets in Lincoln Airpark would mitigate some of the effects of closing Lakeside Drive at Nicolaus Road.

### **Alternative A4**

The “A4” alternative is a variation of the A line. South of the Auburn Ravine, the A4 line coincides with the A alignment. The A4 alignment generally runs to the west

side of the section line, minimizing the impact on wetlands in the area. Approaching Nicolaus Road, the alignment shifts approximately 46 m (151 ft) east of the “A3” line and 213 m (699 ft) east of Lakeside Drive. Construction of the “A4” alignment would not require the closure of Lakeside Drive. The distance between the southbound ramps intersection and Lakeside Drive is 137 m (449 ft). Although this interchange configuration has less capacity than a partial cloverleaf, as in the A alternative, adequate capacity at the off-ramp intersection and nearby local intersections can be provided.

### **2.2.3 Alternative AFD**

The “AFD” alternative considered future upgrading to an expressway/freeway from near Wise Road to north of Sheridan, if an “A” Corridor alternative was initially constructed. The “AFD” line would follow the entire “A” Corridor and rather than connecting with existing SR 65 at the north end of the “A” Corridor, the “AFD” line would proceed on a new alignment east of the existing highway. The “AFD” line would then cross the existing highway, approximately three miles south of Sheridan, where it would conform to the north end of the “D” Corridor alignments.

Another version of the “AFD” would be to upgrade the existing alignment from north of the “A” Corridor alignment to north of Sheridan. This alignment would require extensive frontage roads and right of way.

The “AFD” alignment was evaluated in the 1990 Stage II Project Work Program and was not considered feasible due to its high cost.

### **2.2.4 Alternative D2**

The “D2” alternative was developed in an attempt to reduce the impact on wetlands and residents in the southern portion of the project. This alignment begins 2 km (1.24 mi) south of the “D1” line. The “D2” line is roughly parallel to the “D1” line upon leaving the existing alignment to near Nicolaus Road. North of Nicolaus Road, the “D2” line coincides with the “D1” alignment. The “D2” alignment would require the removal of four to seven residential dwellings and possible soundwalls for approximately five dwellings. Based on a preliminary survey, the “D2” line has a greater impact on dwellings and vernal pools than the “D1” line. It is also longer and more remote from Lincoln and has a greater impact on wetlands than the “D1” line. For these reasons, the “D2” was eliminated from further study.

### **2.2.5 Alternative D13 Dowd Modified**

This alignment was developed in response to the USDA Wetland Conservation Easement. The D 13 Dowd Modified was developed at the same time as the D 13 North Modified. This alternative follows the D 13 alignment until it meets Dalby Road, where it curves east to join Dowd Road, meeting with SR 65 at Sheridan. Dowd Road would be

widened and improved to accommodate the increased traffic, but would remain a two-lane road. The portion of the alternative along Dowd Road would not be access controlled.

The rejection of this alternative was based on safety and operation due to location of existing driveways, which would interfere with the operation of the facility.

#### **2.2.6 Alternative T**

The “T” alternative upgrades the existing SR 65 alignment to four lanes. From Industrial Ave. to Auburn Ravine and from Gladding Road to near Wise Road, a four-lane expressway would be constructed on existing SR 65 alignment. From Auburn Ravine to Gladding Road, the “T” line proposed to provide four lanes plus a continuous left turn lane. This can generally be accomplished by eliminating on-street parking and narrowing the sidewalks from 3.6 m (12 ft) to 2.4 m (8 ft). One or two parking lots could be constructed on vacant land between the junction of SR 193 and Sixth Street, providing these properties do not develop first. Also, older houses on F Street (one block east) could be converted to parking.

Drainage throughout the downtown section would need to be updated to current standards. South of First Street, it is anticipated the entire structural section will need to be reconstructed.

Telephone poles throughout the town are located .9 m (3 ft) behind the face of the curb on the west side of the highway. In addition, a major natural gas junction valve is located east of the clay plant. This valve and possibly some of the gas line would require relocation. Railroad crossing gates would require reconstruction.

The primary disadvantage of this alternative is that it fails to satisfy the regional need for an adequate freeway system in the area. It does not alleviate the problems of numerous cross streets and driveways. Initially, widening to four lanes may reduce the accident rate at the numerous intersections in town. As Lincoln grows, traffic through the central business district will become more congested and it is anticipated the intersection accident rate will increase.

Constructing the four-lane section through the downtown area does not leave an option for future widening. The 10-year and 20-year LOS for four lanes downtown are projected to be E and F respectively. After the 20-year design period, the only viable option to enhance the level of service and capacity will be to construct a bypass.

The Lincoln General Plan policy is to “promote and renew the existing central business district, in order to provide diversified business opportunities.” Heavy traffic volumes associated with a four-lane facility, loss of parking and the removal of at least one existing business are not consistent with the General Plan.

Caltrans Transportation Concept Report (TCR) calls ultimately for a four-lane freeway on this section of highway. For the above reasons, this alternative does not satisfy the regional or local requirements for the State highway.

### **2.2.7 Alternative E**

The “E” Alternative begins south of Industrial Ave. similar to the “A” and “D1” alignments. The “E” line turns in a northwesterly direction around the east side of Lincoln and proceeds through vacant land until it crosses SR 193. The terrain through this first section is flat to rolling hills and land use is primarily grazing. After crossing SR 193, the alignment proceeds northerly and crosses Auburn Ravine. North of Auburn Ravine, there are scattered houses and ranchettes. In this area the alignment turns in a westerly direction. The “E” line crosses Virginiatown Road and McCourtney Road in this area. The line passes along the north edge of the claybed prior to reconnecting with the existing facility. This alignment was developed as an alternative to the A alignment. The “E” alignment distance is approximately 4.2 km (2.6 mi) out of direction as compared to the existing facility. The traffic analysis indicates that a major portion of through traffic would exit the expressway and proceed through Lincoln to save time and distance travel. This alignment, therefore, does not satisfy the purpose and need of the project.

### **2.2.8 TSM (Transportation System Management) Alternative**

The Transportation System Management and Travel Demand Management (TSM/TDM) Alternative was evaluated and eliminated as an isolated alternative in the Major Investment Study. This alternative covers a range of improvements and strategies that aim to reduce the demand on and increase the efficiency of the existing transportation system, including measures such as the expansion of park and ride facilities with connections to intercity transit bus service, ride matching, car/vanpooling and teleconferencing. The estimated cost is not available.

Other TSM measures include signal optimization, two-way left turn lanes, right turn only lanes, parking prohibitions and outside the central core, shoulder widening, truck lanes, passing lanes and merge/ diverge lanes.

The TSM/TDM alternative received the fifth highest score in the evaluation of eight alternatives which included converting the existing highway to four lanes, a minimum bypass alternative, a two and four lane bypass alternative, commuter rail trip diversion, intercity transit bus service and transportation system management and travel demand management (TSM/TDM). Given the City of Lincoln’s low-density land uses and an economy of small business employers, TSM/TDM alternatives may only have limited applicability within the study area. Assuming five percent of the forecasted inter-

regional commute traffic will divert from SR 65 to TSM/TDM applications within the study area, the benefits to SR 65 would be marginal.

Although the Intercity Bus Service and TSM/TDM alternatives scored low as independent alternatives, combined with an improvement such as the bypass alternatives, they would play an important role in the effective use of the overall transportation system.

Acquisition of right-of-way for a park and ride facility is included in the project, and will be located at the junction of Industrial Avenue and SR 65. As a stand-alone project, the park and ride would not be capable of resolving the impacts from the projected increase in traffic.

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## 3 AFFECTED ENVIRONMENT

This chapter describes the environment likely to be affected by the project. The purpose of this chapter is to give the reader background with which to evaluate the impacts of the project that are described in Chapter 4, Environmental Consequences.

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### 3.1 SOCIAL, ECONOMIC AND LAND USE

A Community Impact Assessment (CIA) Report was completed for this project in November 2001. This report describes the socioeconomic environment and evaluates any socioeconomic impact of this project. Copies of this report are available for review at the Department of Transportation, District 3 Sacramento office, 2389 Gateway Oaks Dr., Sacramento, CA.

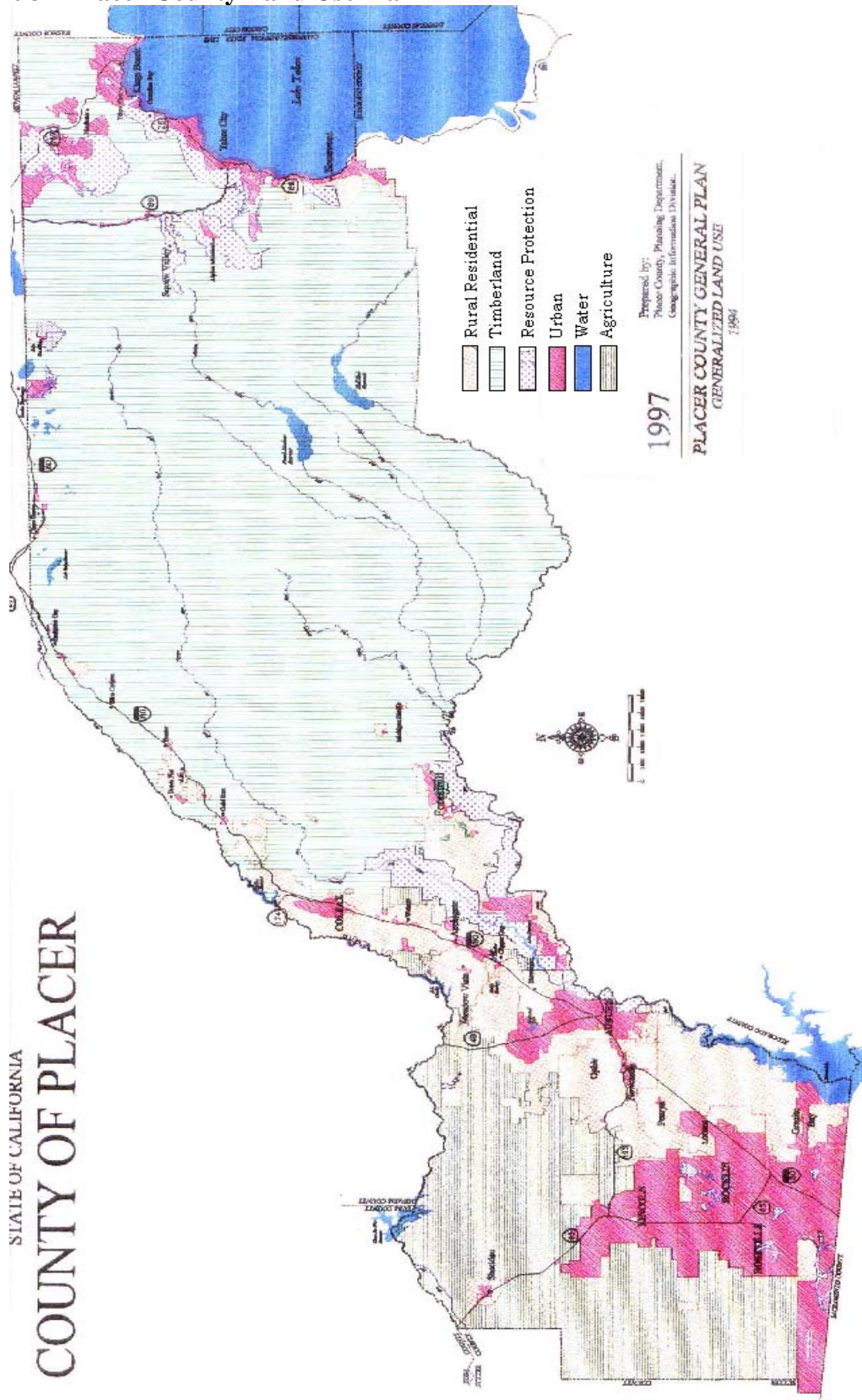
#### 3.1.1 Study Area

The Study Area for the Community Impact Assessment includes the City of Lincoln and the Sheridan Community planning area in addition to the South Placer and Auburn-Foothills regions of Placer County. The City of Lincoln consists of an area of approximately 7,891 ha (19,500 ac). The Sheridan Community planning area embodies an estimated 777 ha (1,920 ac) in Placer County's northwestern region. General information about the South Placer and Auburn-Foothills regions of Placer County is included to provide a greater understanding of the relative significance of the Lincoln Bypass to the west Placer County community. For purposes of this document, the South Placer and Auburn-Foothills regions of Placer County will be referred to as western Placer County.

#### 3.1.2 Major Land Uses

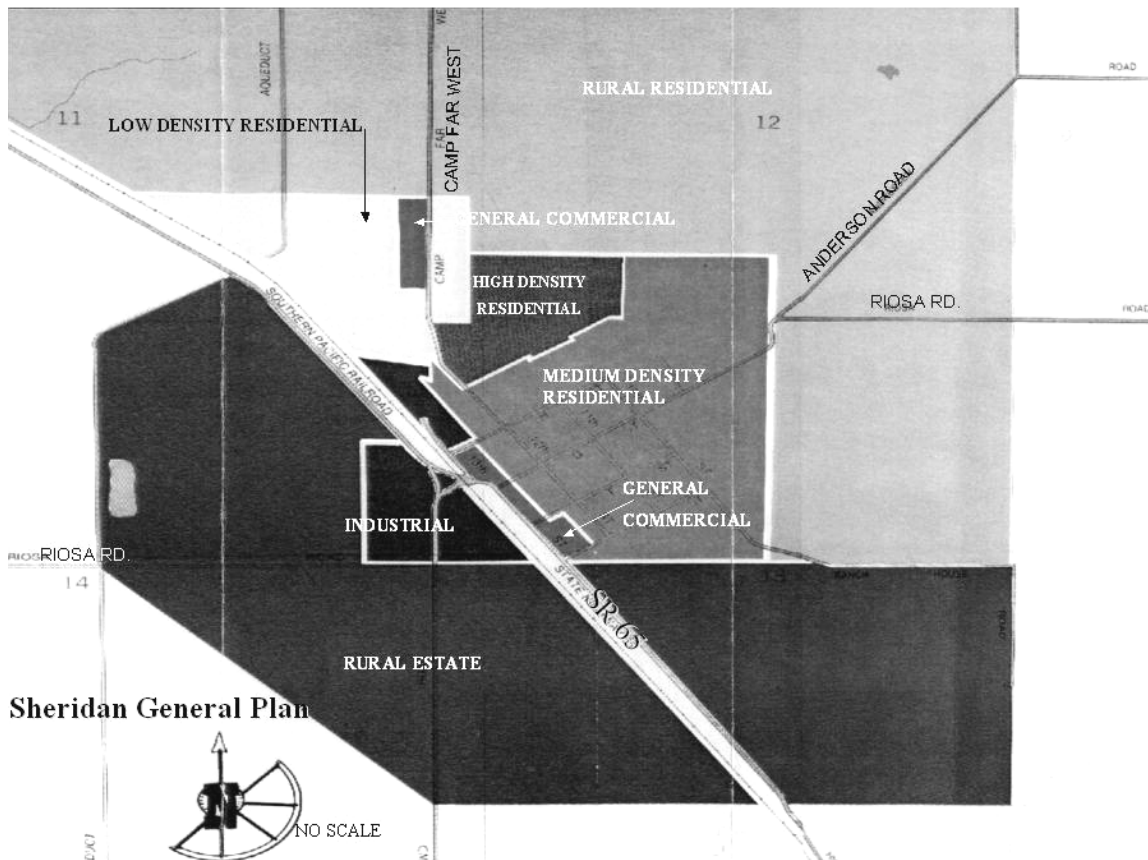
The Placer County General Plan (1994) provides an overall framework of the County's land use plan (Figure 3-1), whereas, the City of Lincoln General Plan (1988) and Sheridan General Plan (1976) supplement the Study Area. Figure 3-2 illustrates the major land uses for the City of Lincoln as adopted under the 1988 General Plan. Sheridan's land use designations adopted under the 1976 General Plan are depicted on Figure 3-3. Major land uses identified within the Study Area are agriculture, residential, industrial, commercial and resource protection, greenbelt, open space, and recreation.

Figure 3-1 Placer County Land Use Plan







**Figure 3-3 Sheridan Land Use Plan**

### Agriculture

Compared to other California counties, Placer County ranks in the lower 20% in terms of total farmland acreage; nevertheless, agriculture is an important component in Placer County's economy as substantiated by the \$60.5 million value of production in 2000. Most of the agricultural use in the project area is within Placer County's jurisdiction and outside Lincoln's city limits. In western Placer County, lands designated for agricultural use represent approximately 42.1 percent of the total acreage in the study area.

An estimated 30% of Lincoln's planning area continues to be used for agriculture, although zoned as urban reserve. Approximately 1813 ha (4,480 ac) lie in the southwestern region while an estimated 518 ha (1,280 ac) are located in the northwestern perimeter. The majority of the agricultural lands are used for cattle grazing; however, both irrigated and dry land farming do exist, with rice being the dominant crop.

Unlike the City of Lincoln, the Sheridan planning area maintains approximately 84% of its land for agricultural uses, totaling an estimated 653 ha (1,613 ac). Agriculture within the Sheridan area has been highly dependent on the availability of water and the

economy, which has limited much of the area to dry grazing, and irrigated pastures with moderate amounts of rice production.

### ***Agricultural Preserves (Williamson Act Agreements)***

Since the draft of this EIS/EIR, Placer County has completed a draft study of western Placer County to assess current agricultural resources and determine how to better protect them from the recent population and housing increase. This draft report was completed in January 2002.

As of 2002, Placer County has 71,000 ha (175,445 ac) of agricultural land (California Department of Conservation, 2003). This breaks down to 3,837 ha (9,481 ac) of prime farmland, 2,231 ha (5,513 ac) of farmland of statewide importance, 8,970 ha (22,166 ac) of unique farmland, 41,617 ha (102,838 ac) of farmland of local importance and 14,345 ha (35,447 ac) of grazing land.

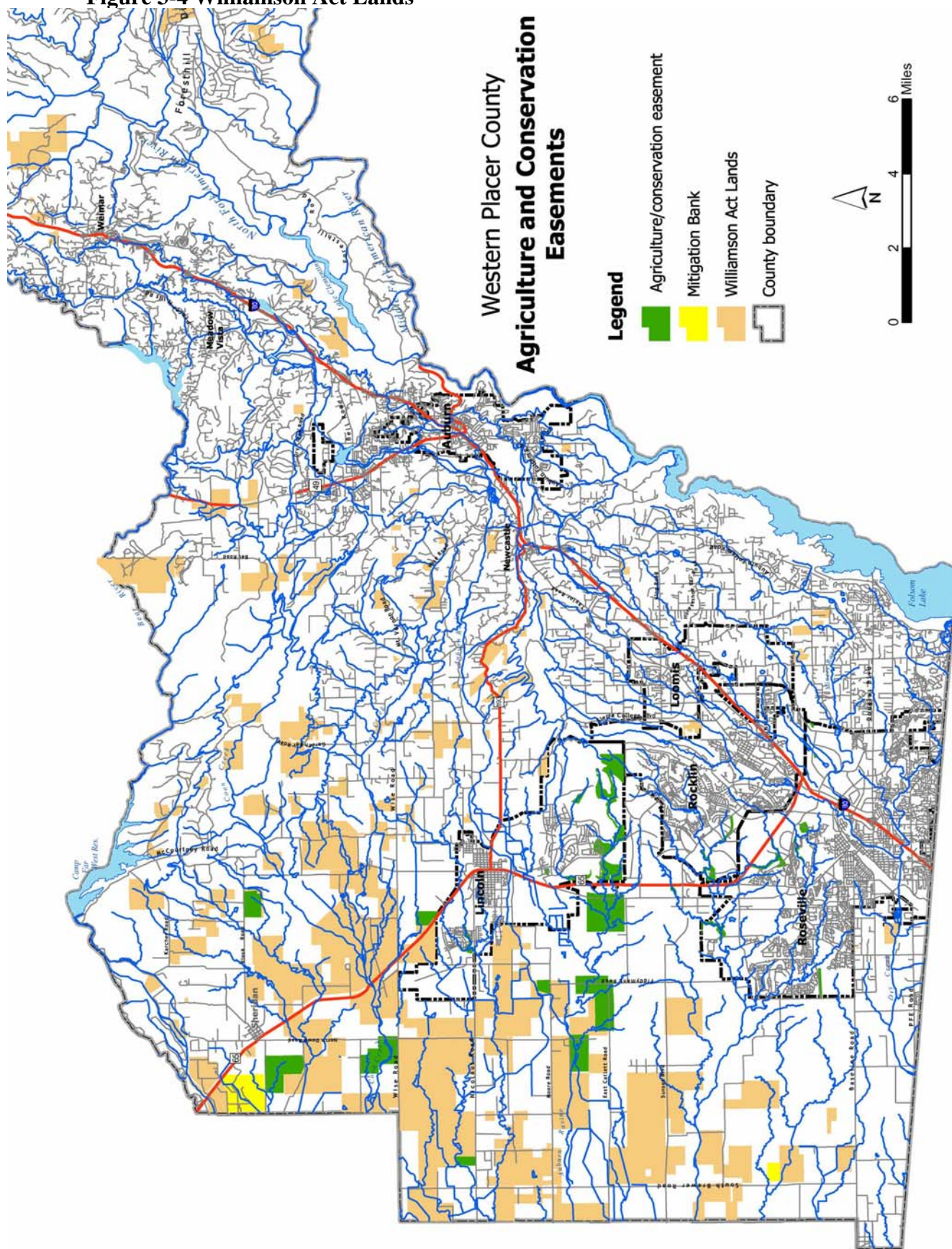
Agricultural uses make up the single largest land category in the western Placer County. This includes 52,290 ha (129,209 ac) of cultivated farmland, idle farmland, pasture and semi-agricultural uses. Lands designated for agricultural use represent approximately 42.1 percent of the total acreage in western Placer County. According to the West Placer County Agricultural Study (January 2002), there are approximately 42,244 acres of land participating in the Williamson Act.

The Placer County Agricultural and Open Space Preserve Program was established in accordance with the Williamson Act to protect agricultural lands for the continued production of agricultural commodities, and to protect certain other lands devoted to open space uses. The Administrative Rules for Agricultural and Open Space Preserves, administered by the County's Planning Director, Agricultural Commissioner and Assessor, implement the provisions of the Williamson Act in Placer County. These rules are not intended to replace the Williamson Act, rather work in conjunction with applicable provisions of the Williamson Act. Please refer to Figure 3-4 for distribution of these lands.

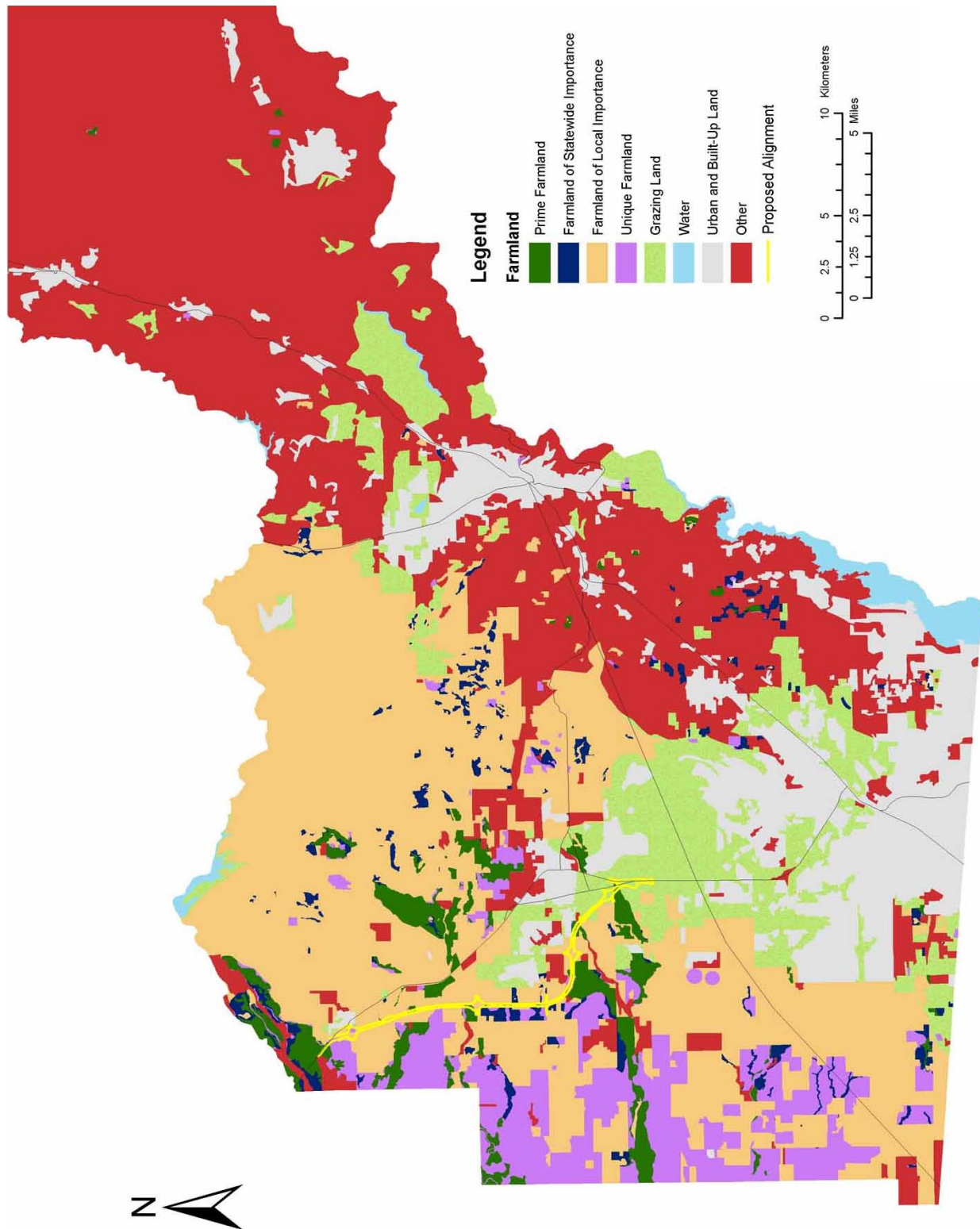
Figure 3-5 shows the distribution of agricultural land in western Placer County. All of the alternatives will affect prime, unique, statewide, and locally important farmlands. Completion of the Farmland Impact Rating (See Chapter 7, Comments and Coordination and Appendix D, Farmland Impact Rating Form) showed that alternatives, A5C1 and AAC2 had point values of 158, and 157. The D1 and D13 point values were 162 and 161. The D13 South and North Modified Alternatives values were both 147.



### Figure 3-4 Williamson Act Lands



**Figure 3-5 Agricultural Lands**





## Residential

Rural residential areas in western Placer County have generally been limited to the agricultural areas while low, medium, and high density residential is essentially aggregated around the cities. Placer County housing stock totals 129,311 of which 103,295 are single-family dwelling units, 21,299 were multiple family dwelling units and 4,717 were mobile homes/trailers (Table 3-7).

Residential land uses in Lincoln occur primarily around the downtown area and project outward, generally concentrated south of Nicolaus Road and north of the Auburn Ravine. The housing stock of Lincoln is composed of approximately 8,979 single-family residences, 889 multiple family units and 96 mobile homes.

**Figure 3-6 Typical residential neighborhood in Lincoln (left) and Sheridan (right).**



Sheridan's urban housing occurs within and on the immediate perimeters of the township. The core area is zoned for medium density residential housing while high and low density residential housing lies northwest of the core area on the east and west side of Camp Far West Road, respectively. Single-family dwelling units primarily make up the housing stock; however, one mobile home park has been established within the township.

## Industrial

There are approximately 1100 ha (2,750 ac) zoned for industrial, light industrial, and industrial planned development within Lincoln. Currently, an estimated 55% of the land zoned for industrial use is developed, primarily located along Lincoln's northern boundary. Undeveloped industrial land continues to be used for agricultural uses until development is necessary. The most prominent industrial companies include the Gladding-McBean clay manufacturing plant, Sierra Pacific Industries wood products, the American Poly-Therm aerospace plant, Weco aircraft gauges and D&D Cabinets. Sheridan's Sunset Industrial Park lies adjacent to the township, straddling SR 65. Currently, 10 ha (26 ac) are zoned for industrial use in Sheridan and is not expected to expand in the near future.

**Figure 3-7 Gladding McBean clay manufacturing plant and Sierra Pacific Lumber**

### **Commercial**

Lincoln's downtown business district is composed of mixed commercial, retail, professional offices, and service outlets. There is approximately 1.2 ha (3 ac) zoned for commercial use located in a corridor along SR 65 between "H" and "E" Streets. Some of the older buildings in the business district have been restored while new construction has primarily been comprised of fast food restaurants. Nevertheless, the downtown area has generally been maintained.

**Figure 3-8 Typical downtown Lincoln and Sheridan businesses**

Sheridan has set aside approximately 4 ha (10 ac) to be zoned for commercial uses. Resembling other rural communities, some businesses provide dual services such as the grocery/hardware store and the small market/bait store. Commercial zones are located along SR 65 and Camp Far West Road; however, many of the existing buildings are currently vacant.

### **Resource Protection, Greenbelt, Open Space, and Recreation**

Placer County, the City of Lincoln and Sheridan have all identified agriculture as a major resource to be protected. Protection of agricultural land uses is generally in the form of buffer zones. These buffer zones can be greenbelts, open space and recreational facilities. Riparian vegetation along the Markham and Auburn Ravines as well as urban reserve in Lincoln's southeast region currently provides natural buffer zones. Buffer

zones are not employed within the Sheridan planning area; however, Sheridan's land use designations have provided a "gradation" between the farmlands and urban development.

### **Placer Legacy Project**

Recently, Placer County has implemented the Placer Legacy Project. The Placer Legacy Project is intended to develop specific, economically viable implementation programs that focus on the preservation of open spaces in order to maintain the abundance of the existing diverse natural habitats while supporting the economic viability of the County and enhancing property values. The Citizens Advisory Committee, the Interagency Working Group and the Scientific Working Group work under the umbrella of the Placer Legacy to develop programs where no programs currently exist and strengthen existing programs.

Placer Legacy is proposing that Placer County put up to 30,352 ha (75,000 ac) of land into a preserve anticipated to cost up to \$183 million. How much land the Placer Legacy program can acquire will be based on the financial resources available to the county, including tax revenues, State or Federal grants and donations.

Currently, Placer County is working in cooperation with the Regulatory Agencies in developing a Natural Communities Conservation Plan/Habitat Conservation strategy.

### **3.1.3 Developable Land**

Generally, development in Placer County has been concentrated around the major cities, consistent with the land use zoning specified in the General Plan. Conversely, the City of Lincoln has zoned much of the agricultural land and open space as urban reserve.

Sheridan, being under the jurisdiction of Placer County with a strong agricultural influence, has not set aside additional areas as urban reserve. Moreover, empty lots are still available for development scattered within the already developed areas.

### **Development Trends**

Within the Study Area, Lincoln is generally the only area that is experiencing growth or expects growth in the near future. Lincoln has steadily been growing from the existing city limits outward into its sphere of influence. Currently, all the developments that had been approved at the time the Draft EIR/S was prepared have been built. Developments that have been completed during the preparation of the final report include: Auburn Ravine Oaks, Laehr Estates, Brookview 2, Brookview 3, Park Estates 1-3, Glenmoor, Lakeside Estates 5, Lakeside Estates 1-3, Brookview 4 and Lakeside Estates 4 and Teal Hollow. Other developments listed in Table 3-1 and shown in Figure 3-9 are in various planning and construction stages. As development proceeds outward,



Lincoln has adopted the use of planned developments as a means to prevent urban sprawl.

**Table 3-1 Current Projects for the City of Lincoln (10/14/04) (refer to Figure 3-9)**

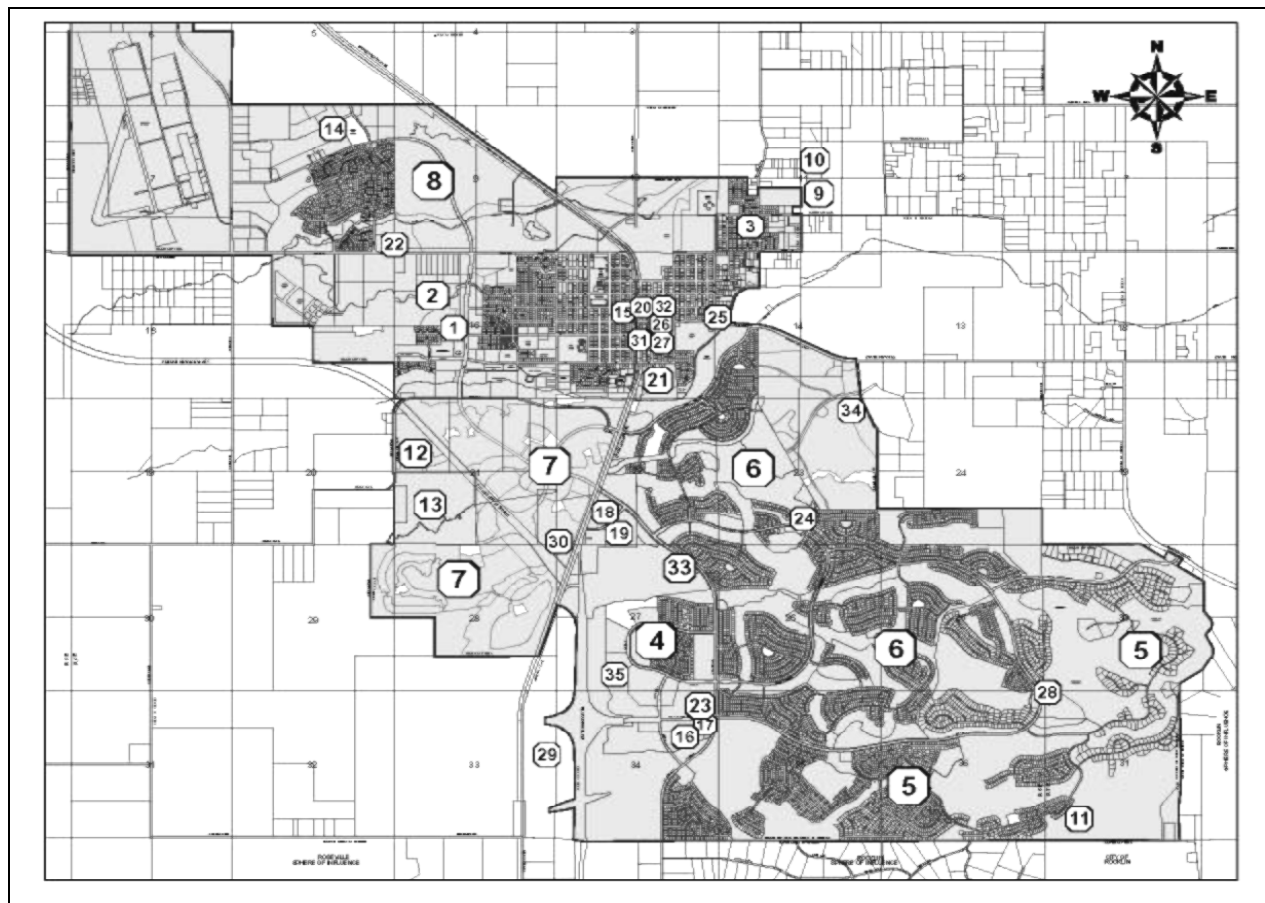
| # On Map | Residential Projects                         |   |                      |
|----------|--|---|----------------------|
| 1        | Lincoln Terrace Apartments                   | 80 Unit apartment complex   | 2.06 ha (5.1 ac)     |
| 2        | Brookview IV                                 | 209 Single Family Residential   | 23.4 ha (58 ac)      |
| 3        | <u>Sycamore Ventures</u>                     | <u>14 Single Family Infill lots</u>                                   | Not available        |
| 4        | <u>Twelve Bridges Area C</u>                 | <u>100 Unit Planned Development</u>                                   | 20.23 ha (50 ac)     |
| 5        | <u>Twelve Bridges Area A</u>                 | <u>4,335 Unit Planned Development</u>                                 | 1209.6 ha (2,989 ac) |
| 6        | <u>Twelve Bridges Sun City Lincoln Hills</u> | <u>11,235 Unit Planned Development</u>                                | 1191.8 ha (2,648 ac) |
| 7        | <u>Lincoln Crossing</u>                      | <u>2,958 Unit Planned Development</u>                                 | 433.0 ha (1,070 ac)  |
| 8        | <u>Foskett Ranch</u>                         | <u>323 low- and high-density residential</u>                          | 117.36 ha (290 ac)   |
| 9        | Lincoln Highlands                            | 196 Residential   | 19.42 ha (48 ac)     |
| 10       | Cypress Meadows                              | 84 Residential  | 8.09 ha (20 ac)      |
| 11       | Western Placer Education Foundation          | 71-lot single family homes  | 10.52 ha (26 ac)     |
| 12       | <u>Three D South</u>                         | <u>185 lot subdivision</u>  | 28.29 ha (69.9 ac)   |
| 13       | <u>Aitken Ranch</u>                          | <u>472 unit planned development</u>                                   | 63.13 ha (156 ac)    |
| 14       | Lakeside 6                                   | 706 Residential units   | 42.49 ha (105 ac)    |
|          | <b>Industrial/Commercial Projects</b>        |   |                      |
| 15       | Butterfield Building Renovations             | Historic building renovations   | Not available        |
| 16       | Lincoln Village Shopping Center              | Shopping center (95,424 ft <sup>2</sup> )                             | 4.09 ha (10.1 ac)    |
| 17       | <u>Chevron Station, Twelve Bridges</u>       | <u>Gas station, convenience store, carwash (2,945 ft<sup>2</sup>)</u> | Not available        |
| 18       | Sterling Pointe Shopping Center              | Shopping Center with Supermarket (144,000 ft <sup>2</sup> )           | Not available        |
| 19       | <u>Parkway Pointe Shopping Center</u>        | <u>Shopping center (179,800 ft<sup>2</sup>)</u>                       | Not available        |
| 20       | Almond Tree Commercial Building              | Restaurant, lounge, office space (14,103 ft <sup>2</sup> )            | Not available        |
| 21       | <u>Lincoln Gateway</u>                       | <u>Retail, commercial, office, housing</u>                            | 7.34 ha (18.14 ac)   |
| 22       | <u>Nicolaus Retail Center</u>                | <u>Commercial (20,400 ft<sup>2</sup>)</u>                             | 0.93 ha (2.3 ac)     |
| 23       | <u>Lincoln Commercial Center</u>             | <u>Shopping center with supermarket (118,763 ft<sup>2</sup>)</u>      | 5.38 ha (13.3 ac)    |
| 24       | Del Webb Commercial Development              | Neighborhood shopping center (19,910 ft <sup>2</sup> )                | 1.0 ha (2.47 ac)     |
| 25       | Lincoln Produce                              | Market and office (10,700 ft <sup>2</sup> )                           | Not available        |
| 26       | <u>Zisk Office Building</u>                  | <u>Residential conversion to Office space</u>                         | Not available        |
| 27       | <u>Farrington Office Building</u>            | <u>Office Building (8,050 ft<sup>2</sup>)</u>                         | Not available        |
| 28       | <u>Catta Verdera Country Club</u>            | <u>Private Country Club (27,000 ft<sup>2</sup>)</u>                   | Not available        |
| 29       | <u>Lincoln 270</u>                           | <u>City annexation</u>  | 112.5 ha (278 ac)    |
| 30       | <u>Home Depot</u>                            | <u>Commercial building and garden</u>                                 | Not available        |

| # On Map      | Residential Projects                |  |               |
|---------------|-------------------------------------|--|---------------|
|               |                                     | center (106,507 ft <sup>2</sup> and 34,646 ft <sup>2</sup> )   |               |
| <u>31</u>     | <u>Volen Commercial Buildings</u>   | <u>2-Story Commercial Building</u><br>(5,032 ft <sup>2</sup> ) | Not available |
| <u>32</u>     | <u>Lavallee Office Building</u>     | <u>Office/Retail (1,404 ft<sup>2</sup>)</u>                    | Not available |
| <b>Other:</b> |                                     |  |               |
| 33            | Granite Springs Church              | 35,075 ft <sup>2</sup>   | Not available |
| <u>34</u>     | <u>St. Joseph's Catholic Church</u> | <u>20,851 ft<sup>2</sup></u>                                   | Not available |
| <u>35</u>     | <u>Kaiser Permanente</u>            | <u>2 Story Medical Building (75,138 ft<sup>2</sup>)</u>        | Not available |

Updated 10/14/04 by Juanita Cano, Community Development Department

Underlined projects updated 6/22/05, Source: <http://www.ci.lincoln.ca.us/pagedownloads/Current%20Projects%205-3-05.pdf>

**Figure 3-9 Current Projects in the City of Lincoln**



Updated 10/14/04 by Juanita Cano, Community Development Department

### **3.1.4 Federal, State, County and City Adopted Goals and Policies**

#### **Agriculture**

##### ***Federal Policies***

In accordance with the National Environmental Policy Act (NEPA) and the provisions of the Farmland Protection Policy Act (7 USC 4201-4209; and its regulations, 7 CFR Part 658), Federal actions that would result in a conversion of prime, unique, statewide, or local important farmland to non-farm use must examine the effects of the action using the criteria set forth in the Act, and, if there are adverse effects, must consider alternatives to lessen them. Early consultation with the Natural Resource Conservation Service (NRCS) and completion of a Farmland Conversion Impact Rating (Form AD 1006) was conducted on June 22, 1999.

##### ***State Policies***

The State of California has a voluntary program by which owners of farmland or open space can define their land as an Agricultural Preserve through the use of California Land Conservation (Williamson) Act contracts. Landowners are offered a preferential tax rate based on a property's agricultural value, rather than its full market value. In return, the landowner is required to sign a contract with the appropriate local jurisdiction stipulating that the owner will not develop the land for a minimum of a ten-year period. Each year the contract is automatically renewed for a new ten-year period, unless the landowner notifies the local government of the desire not to renew. In that case, the land use restrictions remain in effect until the remaining nine years of the contract have passed. There are also provisions for canceling the contract if cancellation is consistent with the purposes of the Williamson Act or otherwise found to be in the public interest.

The Department of Conservation Farmland Mapping and Monitoring Program has tracked protected farmland under the California Land Conservation (Williamson) Act. Figure 3-5 shows the farmland in Placer County and Figure 3-4 shows farmland under the Williamson Act.

Table 3-2 distinguishes the number of affected farmlands that are under Williamson Act contracts, farmlands that have opted to not renew the Williamson Act contracts but are still subject to land use restriction for the remainder of the contract, irrigated farmland that is under normal ownership and vacant or dry farmland under normal ownership.

**Table 3-2 Affected Farmland Parcels by Alternative**

| Alternative        | CLCA Restriction<br>(Williamson Act) |                              | Farms Under Normal<br>Ownership |                                     | Total Affected<br>Farmland |
|--------------------|--------------------------------------|------------------------------|---------------------------------|-------------------------------------|----------------------------|
|                    | Under<br>Contract <sup>1</sup>       | Non-<br>Renewal <sup>2</sup> | Irrigated<br>Farm <sup>3</sup>  | Vacant,<br>Dry<br>Farm <sup>4</sup> |                            |
| A5C1               | 8                                    | 7                            | 1                               | 6                                   | 22                         |
| AAC2               | 9                                    | 7                            | 1                               | 5                                   | 22                         |
| D1                 | 14                                   | 13                           | 3                               | 7                                   | 37                         |
| D13                | 17                                   | 13                           | 3                               | 8                                   | 41                         |
| D13 South Modified | 15                                   | 7                            | 1                               | 5                                   | 28                         |
| D13 North Modified | 16                                   | 8                            | 1                               | 4                                   | 28                         |

Source: Dept. of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, Placer County 1996 Land Conservation Act Enrollment.

<sup>1</sup> “Under Contract” means that these farmlands are under an automatically renewable contract provided by the California Land Conservation Act (Williamson Act) for a ten-year period.

<sup>2</sup> “Non-Renewal” means that the landowners had previously signed a ten-year contract provided by the California Land Conservation Act (Williamson Act) but have opted not to renew. Therefore, the farmland is subject to land use restrictions for the remaining nine years of the contract.

<sup>3</sup> “Irrigated Farm” means that the land is considered irrigated farmland under normal ownership. Therefore, the farmland is under no land use restrictions.

<sup>4</sup> “Vacant, Dry Farm” means that the land is either vacant but previously farmed or is dry farmed and is under normal ownership. Therefore, the farmland is under no land use restrictions.

### ***Placer County Policies***

Recognizing the importance of agriculture, the Placer County Board of Supervisors adopted the Placer County Agricultural Element (1989) to supplement the Countywide General Plan in order to “establish policies that will improve the viability of agricultural operations and promote the conservation of agricultural land.”

### ***City of Lincoln Policies***

Although agriculture does not occupy a large amount of the area within the City of Lincoln, there are policies outlined in the General Plan to retain rural agricultural areas until the need for development emerges. These agricultural policies are meant to ensure that agriculture will continue to be a significant land use by implementing planned development based on economic and population needs. Additionally, Lincoln has adopted the policy to require that agricultural land uses be buffered from urban land uses using greenbelts, open space setbacks, soundwalls, fencing and berming.

### ***Sheridan Community Policies***

Sheridan’s economy is strongly influenced by the agricultural presence; consequently, the General Plan emphasizes the preservation of agricultural land uses. Sheridan’s goal for agriculture as an environmental resource specifies “more productive agricultural soils be put to agricultural uses rather than being converted to non-agricultural activities.” Additionally, Sheridan’s community development goal also

encourages the “continued and increased agricultural activity on lands conducive to agricultural uses.”

## **Residential**

### ***Placer County Policies***

According to the Placer County General Plan, the goal for residential land use is “to provide adequate land in a range of residential densities to accommodate the housing needs of all income groups expected to reside in Placer County.” This is accomplished by promoting new residential development in higher-density residential areas located along major transportation corridors and transit routes.

### ***City of Lincoln Policies***

The goal for residential land use outlined in the Lincoln General Plan is “to designate, protect and provide land to ensure sufficient residential development to meet community needs.” The city seeks to accomplish this by providing a variety of land use designations that will meet the future needs of the city and promote flexibility and innovation in residential land use through the use of planned unit developments, developer agreements, specific plans, mixed use projects and other innovative development and planning techniques.

Recently, the City’s residential developments have increased due to population growth and housing demands. Lincoln’s General Plan is currently being updated. It is anticipated that new residential zoning will be added within the City’s sphere of influence.

### ***Sheridan Community Policies***

The Sheridan Community General Plan has adopted a residential land use goal to provide sound and adequate housing and positive living experience for all residents in the plan area. However, there have not been any policies implemented to support Sheridan’s land use goal.

## **Industrial**

### ***Placer County Policies***

The Placer County adopted goal for industrial land use states that it will “designate adequate land for and promote development of industrial uses to meet the present and future needs of Placer County residents for jobs and maintaining economic vitality.”

Additionally, the County shall designate specific areas suitable for industrial development and reserve such lands in a range of parcel sizes to accommodate a variety of industrial uses.

***City of Lincoln Policies***

The industrial land use goal for the City of Lincoln is “to designate sufficient land for existing and new industrial uses that is compatible with the existing community.” Policies supporting industrial land uses in the City of Lincoln include designating land sufficient to meet future needs by promoting planned mixed-use developments.

The City anticipates light industrial development surrounding the current local airport, which supports their plans to expand the airport.

***Sheridan Community Policies***

Sheridan’s industrial land use goal and policies encourage the development of industry where suitable lands and public services are available. Additionally, the Sheridan General Plan emphasizes that industrial land uses should not conflict with adjacent uses.

**Commercial*****Placer County Policies***

Similar to Placer County’s industrial land use goal, the adopted commercial land use goal is “to designate adequate commercial land for, and promote development of, commercial uses to meet the present and future needs of Placer County residents and visitors and maintain economic vitality.”

The diversion of “through” traffic from the downtown business district will likely promote pedestrian circulation from nearby residential areas. The mixed-use planned development projects will also encourage pedestrian circulation since they include both residential and commercial land uses. Furthermore, it is likely that a majority of the commercial land uses will be located near the chosen alignment to avoid noise impacts on residential areas.

***City of Lincoln Policies***

The City of Lincoln has adopted a commercial land use goal “to retain and renew existing commercial land uses and designate sufficient new commercial areas to meet future city needs.” To support Lincoln’s land use goal, policies address issues of land use incompatibilities by implementing planned mixed-use development projects.

***Sheridan’s Policies***

Sheridan’s goal for commercial land use is to “provide convenient and sufficient commercial facilities for the daily needs of residents and travelers through the area.” The Sheridan General Plan implements a commercial land use policy of expanding

commercial areas on routes of major traffic; however, the County would be responsible for new commercial development and the remodeling of existing commercial structures.

## **Resource Protection, Greenbelt, Open Space, and Recreation**

### ***Placer County Policies***

Placer County's goal for resource protection, greenbelts, open space and recreation is to establish and maintain interconnected greenbelts and open spaces for the protection of native vegetation and wildlife and for the community's enjoyment. This goal is accomplished by identifying significant natural, open space and cultural resources in advance of development to allow incorporation into the project design. In addition, the County requires that development avoid areas rich in wildlife or of a fragile ecological nature.

The Placer Legacy Citizens Advisory Committee (Placer Legacy) has been formed to help develop a long-range comprehensive open space protection plan. Along with the formation of the Placer Legacy, an open space trust fund has been established to ensure the protection and maintenance of open space lands in Placer County.

### ***City of Lincoln Policies***

The City of Lincoln's goal is to designate, protect, and conserve natural resources, open space and recreation lands in the City; and provide opportunities for recreational activities to meet citizen needs.

### ***Sheridan Policies***

Sheridan's goal for resource protection, greenbelts, open space and recreation is to plan for adequate recreational facilities. However, there have not been any policies adopted to support this goal.

## **3.1.5 Demographic Profile and Trends**

The following sections identify the composition of the areas affected by the proposed project.

The Study Area is composed of census tracts 213.01, 213.03, 213.04, 214.01 and 214.02. Information regarding the Study Area's demographic profile and trends were compiled from the 2000 United States Census (U.S. Census) and from the California Department of Finance where available. Census tracts 213.01 and 213.04 include the Sheridan community as well as the outlying rural agricultural areas. Projections and estimates regarding the more urban area of Lincoln have been provided whenever available to establish trends of the Study Area.

**Population**

The population totals for census tracts 213.01, 213.03, 213.04, 214.01 and 214.02 were 2,747, 5,479, 4,727, 2,495, and 6,960 respectively, totaling 22,408 people. According to the Sacramento Area Council of Governments, Lincoln had moderate population growth up until 1999. From 1999 to 2000, population jumped approximately 29%. This annual growth rate is expected to decrease and level off in 2015 to a rate of less than 1% making the average annual growth rate for the next 25 years at 7.35%. Expected population in Lincoln by the year 2025 is approximately 33,000. (<http://sacog.org/demographics/projection> ).

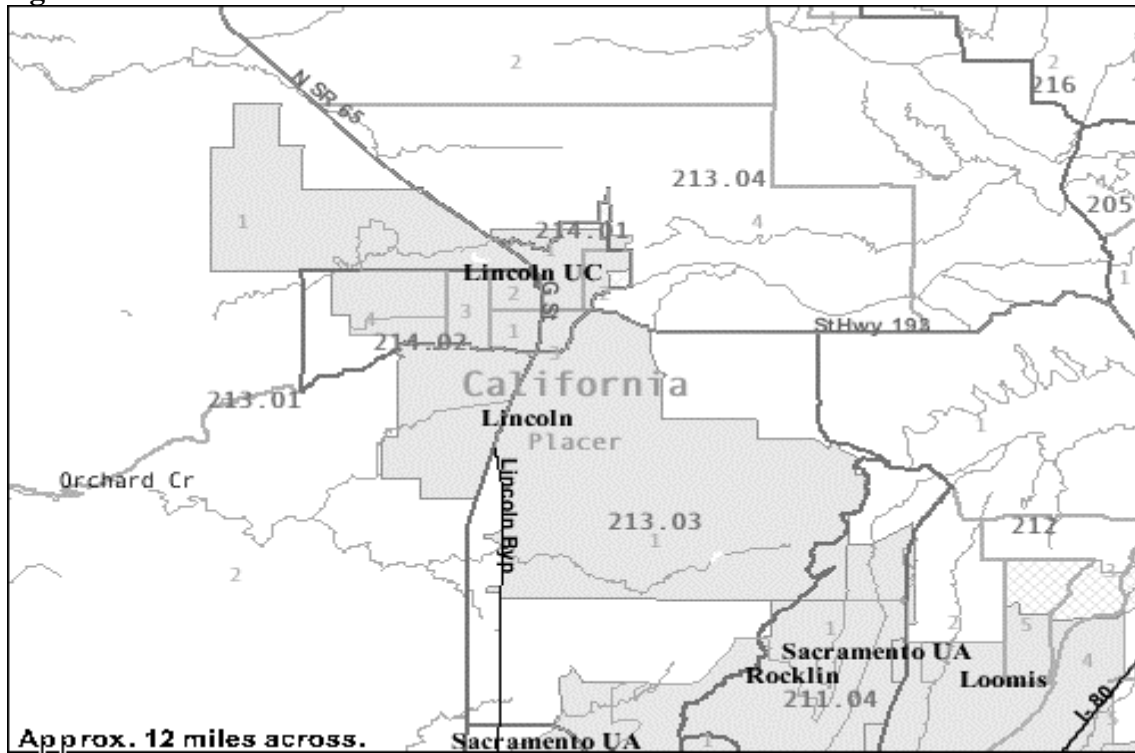
**Age Distribution**

The median age range for tracts 213.01, 213.03, 213.04 and 214.01 in 2000 was 33-40 while tract 214.02 the median age was 30. The median age range may increase for tract 213.03 and 213.04 once the Twelve Bridges development is constructed due to the 6,334 age-restricted dwelling units intended for seniors.

**Ethnic Mix**

Table 3-3 shows that White residents dominated the 2000 population (78.5% in the Study Area with 17,601 persons). The Placer County ethnic make-up shows analogous trends and is projected to maintain a similar ethnic mix. Based on Community Impact Assessment, tract 214 Block Group 2 (based upon 1990 census) does have a high concentration of minorities. Census 2000 shows the following blocks as having a high percentage of minorities: 213.03, 213.04 and 214.02. These areas straddle the existing alignment and are not expected to incur direct impacts from any of the proposed alignments. A potential indirect impact could include a decrease in accessible public transportation. Although minor changes to the current bus route are inevitable due to access changes, local transit authorities anticipate that the areas serviced will increase as the needs change due to development.



**Figure 3-10 Census Tracts****Table 3-3 Ethnic Composition of the Study Area Population for 2000**

| Ethnicity   | Tract<br>213.01<br>(% of tract<br>total) | Tract<br>213.03<br>(% of tract<br>total) | Tract<br>213.04<br>(% of tract<br>total) | Tract<br>214.01<br>(% of tract<br>total) | Tract<br>214.02<br>(% of tract<br>total) | Study<br>Area<br>Total | Percentage<br>of Study<br>Area |
|---|--|--|--|--|--|------------------------|--------------------------------|
| White   | 2343<br>(85.3%)                          | 4700<br>(85.8%)                          | 4065<br>(86%)                            | 1789<br>(71.7%)                          | 4704<br>(67.6%)                          | 17,601                 | 78.5%                          |
| Black   | 23<br>(0.8%)                             | 87<br>(1.6%)                             | 14<br>(0.3%)                             | 3<br>(0.1%)                              | 31<br>(0.4%)                             | 158                    | 0.7%                           |
| American Indian, Eskimo<br>Aleutian, Asian, Pacific<br>Islanders, and other | 83<br>(3.0%)                             | 300<br>(5.5%)                            | 158<br>(3.3%)                            | 35<br>(1.4%)                             | 162<br>(2.3%)                            | 738                    | 3.3%                           |
| Hispanic  | 298<br>(10.8%)                           | 392<br>(7.2%)                            | 490<br>(10.4%)                           | 668<br>(26.8%)                           | 2063<br>(29.6%)                          | 3,911                  | 17.5%                          |
| Total   | 2,747                                    | 5,479                                    | 4,727                                    | 2,495                                    | 6,960                                    | 22,408                 | 100%                           |

U.S. Census Bureau 2000

### 3.1.6 Household Size and Composition

Table 3-4 shows the number of households, number of families, and the persons per family found in the Study Area in 2000. Tract 213.03 had the highest percentage of families (86.2% living together, followed by tract 213.01 (81.9%), and tract 213.04 (80.7%). For the Study Area, 81.8% of the households were home to families. The family size ranged from 3.20 to 3.33 persons per family in the area. Similar to the age distribution of the Study Area, the average family size may decrease due to an influx of older persons projected to move into the age-restricted homes currently planned.

**Table 3-4 Household Population in Study Area (2000)**

|                     | <b>Tract<br/>213.01</b> | <b>Tract<br/>213.03</b> | <b>Tract<br/>213.04</b> | <b>Tract<br/>214.01</b> | <b>Tract<br/>214.02</b> | <b>Total</b> |
|---------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|--------------|
| Households          | 975                     | 1,842                   | 1,636                   | 856                     | 2,297                   | 7,606        |
| Families            | 799                     | 1,587                   | 1,320                   | 656                     | 1,799                   | 6,161        |
| Average family size | 3.10                    | 3.20                    | 3.17                    | 3.27                    | 3.33                    | -            |

U.S. Census Bureau 2000

**3.1.7 Personal Income**

Table 3-5 outlines income levels for the Study Area. Poverty guidelines for 1999 are \$ 16,700 for a family of four. Poverty guidelines for 2001 are \$17,650 for a family of four. (U.S. Census Bureau 2000) The mean percentage of persons living below the poverty rate in 1999 was 6.38% with a standard deviation of 5.8. Therefore, areas that displayed percentages greater than 12.2% may be considered high concentration areas of low-income people. Census tract 214.01 Block Group 1 has 13.5% of its population living below the poverty rate. Census tract 214.02 Block Group 3 has a highest percentage of its population living below poverty status with 20.6%. However, this area will continue to grow and further construction of new homes would have the potential to attract people with higher incomes and would change the income profile of the block group. Furthermore, the region has benefited from a surge of hi-tech industries that has contributed to lowering the unemployment rate and potentially decreasing the amount of people living below the poverty rate.

**Table 3-5 Income and Poverty Data for Study Area (1999)**

| <b>Census Tract</b>                        | <b>213.01</b> |          | <b>213.03</b> | <b>213.04</b> |          |          |          |
|--|---------------|----------|---------------|---------------|----------|----------|----------|
| <b>Block Group</b>                         | <b>1</b>      | <b>2</b> | <b>1</b>      | <b>1</b>      | <b>2</b> | <b>3</b> | <b>4</b> |
| Median Household Income                    | 58,689        | 52,500   | 87,347        | 51,144        | 36,000   | 54,539   | 68,661   |
| Median Family Income                       | 67,727        | 53,854   | 91,081        | 69,583        | 33,646   | 56,458   | 86,005   |
| Per Capita Income                          | 24,090        | 22,044   | 32,597        | 24,474        | 22,320   | 28,468   | 21,583   |
| Persons Below Poverty Status*              | 80            | 87       | 25            | 211           | 27       | 72       | 18       |
| Percentage of Persons Below Poverty Status | 4.6%          | 8.6%     | 0.4%          | 1.2%          | 4%       | 5.8%     | 1.7%     |

\*Poverty guidelines for 1999 are \$ 16,700 for a family of four. Poverty guidelines for 2001 are \$17,650 for a family of four. U.S. Census Bureau 2000

**Table 3-6 Income and Poverty Data for Study Area (1999) Continued**

| Census Tract                               | 214.01 |        |        | 214.02 |        |        |        |
|--|--------|--------|--------|--------|--------|--------|--------|
| Block Group                                | 1      | 2      | 3      | 1      | 2      | 3      | 4      |
| Median Household Income                    | 45,156 | 29,861 | 53,393 | 47,639 | 41,806 | 33,086 | 75,044 |
| Median Family Income                       | 47,361 | 34,643 | 62,813 | 49,567 | 50,833 | 38,233 | 78,076 |
| Per Capita Income                          | 19,552 | 15,022 | 22,122 | 17,804 | 15,139 | 13,914 | 30,641 |
| Persons Below Poverty Status*              | 141    | 58     | 8      | 75     | 95     | 903    | 0      |
| Percentage of Persons Below Poverty Status | 13.5%  | 6.6%   | 2.3%   | 7.8%   | 1.2%   | 20.6%  | 0%     |

\*Poverty guidelines for 1999 are \$ 16,700 for a family of four. Poverty guidelines for 2001 are \$17650 for a family of four. U.S. Census Bureau 2000

## Housing Characteristics

### Housing Stock

In January, 2004, Lincoln had a total of 9,964 housing units composed of 90.11% single family residents, 8.92% multiple unit complexes, and .96% mobile homes (Table 3-7). The housing vacancy rate was 3.78%. Neighboring cities such as Rocklin and Roseville experienced vacancy rates of 3.58% and 3.72% respectively. The high 11.22% vacancy rate for Placer County is likely due to the popularity of vacation homes in the resort areas of the county.

**Table 3-7 Placer County Housing Estimates (2004)**

| Area              | Total Housing | Single Family | Multiple Unit | Mobile Home | Occupied | Percent Vacant | Persons/ Household |
|-------------------|---------------|---------------|---------------|-------------|----------|----------------|--------------------|
| Auburn            | 5,732         | 4,052         | 1,680         | 0           | 5,569    | 2.84           | 2.232              |
| Colfax            | 784           | 524           | 227           | 33          | 758      | 3.32           | 2.346              |
| Lincoln           | 9,964         | 8,979         | 889           | 96          | 9,587    | 3.78           | 2.392              |
| Loomis            | 2,342         | 2,162         | 67            | 113         | 2,274    | 2.90           | 2.723              |
| Rocklin           | 19,175        | 14,140        | 4,596         | 439         | 18,461   | 3.72           | 2.638              |
| Roseville         | 40,136        | 30,611        | 8,982         | 543         | 38,700   | 3.58           | 2.477              |
| Balance of County | 51,178        | 42,827        | 4,858         | 3,493       | 39,450   | 22.92          | 2.563              |
| Unincorporated    | 78,133        | 60,468        | 16,441        | 1,224       | 75,349   | 3.56           | 2.494              |
| County Total      | 129,311       | 103,295       | 21,299        | 4,717       | 114,799  | 11.22          | 2.518              |

Source: California Department of Finance, Demographic Research Unit 2004

The Final Relocation Impact Report (FRIR) indicates that the available single family residences, multiple family units, and mobile homes for rent and for sale was estimated at 4.4% for each category. Although the numbers of multiple-family dwellings

are increasing to meet the increased demand for rental units, the overall ratio of multi-family to single family units remains low.

### 3.1.8 Economic Conditions

#### Employment

Table 3-8 shows that in 2001 the leading employment sectors in Placer County were services, trade, government, manufacturing and construction. Industry employment projections for forecast period of 1997-2004 estimates the services industry will grow to 35,600 jobs by the year 2004. Within the services industry, the majority of this growth is projected for the business services component. Trade has been growing steadily and projections for wholesale and retail trade will increase almost 35 percent between 1997-2004. A big portion of this retail growth is occurring due to large retail facilities opening in the Roseville/Rocklin area, such as the Roseville Galleria. Retail growth is expected to continue due to this area being one of the state's fastest population growth areas and rapid increase of high wage jobs in the region. The highest increases in industry markets between 1997 and 2004 will be in Manufacturing (53.4%), Services (43.0%) and Retail Trade (34.7%). Construction transportation/public utilities and finance/insurance/real estate are also expected to see increases of jobs available.

**Table 3-8 Placer County Employment by Industry (2001)**

| Industry                          | Share Of Market |
|-----------------------------------|-----------------|
| Services                          | 27.3%           |
| Retail Trade                      | 22.4%           |
| Government                        | 15.4%           |
| Manufacturing                     | 11.8%           |
| Construction & Mining             | 11.7%           |
| Finance, Insurance & Real Estate  | 5.7%            |
| Transportation & Public Utilities | 3.6%            |
| Wholesale Trade                   | 3.0%            |
| Agriculture                       | .3%             |

California Employment Development Department, 2002 Snapshot at <http://www.calmis.ca.gov>

#### Employers

Table 3-9 shows that in 2004, the largest employers in Placer County were located in Roseville, including Hewlett-Packard, PRIDE Industries and Kaiser Permanente and Thunder Valley Casino. In addition, many high technological companies have relocated to Roseville in the recent years. Projections indicate that Placer County will continue to attract high technology industries because of quality of life, cost of housing and recreational opportunities. As the county seat, Auburn has a high concentration of government workers while Rocklin's prominent employers are Hewlett-Packard and

TASQ Technology Inc. The City of Lincoln's leading employer, Sierra Pacific Industries, ranks in the lower spectrum of major employers in Placer County.

**Table 3-9 Largest Private Sector Employers in Placer County (2004)**

| Name – City                                  | Industry                                  | Number of Employees |
|--|---|---------------------|
| Hewlett-Packard Company – Roseville, Rocklin | Computer & Office Equipment-Manufacturing | 4,000               |
| Kaiser Permanente – Roseville                | Hospitals                                 | 2,707               |
| Thunder Valley Casino                        | Casinos                                   | 2,200               |
| Sutter Roseville Medical Center – Roseville  | Hospitals                                 | 1,672               |
| Squaw Valley Ski Corp. – Olympic Valley      | Misc. Amusement, Recreation Services      | 1,500               |
| Union Pacific Railroad – Roseville           | Transportation, Railroad                  | 1,200               |
| Pride Industries – Auburn/Roseville          | Individual & Family Services              | 1,050               |
| SureWest Communications                      | Telecommunication Services                | 1,000               |
| NEC Electronics USA Inc. – Roseville         | Electronic Components & Accessories       | 850                 |

Source: Sacramento Regional Research Institute, December 2004.

### **Labor Force**

As shown in Table 3-10, the 2004 civilian labor force in Placer County was 143,500 with a 3.8% unemployment rate. Unemployment in Placer County has been steadily dropping since its peak of 8.0% in 1992. Of the communities in the vicinity of the Study Area, Lincoln's unemployment rate was the highest at 4.5% followed by Roseville at 4.1%.

**Table 3-10 Placer County Civilian Labor Force and Employment Rates ( 12/04)**

| Area Name     | Labor Force | Employment | Unemployment | Unemployment Rate |
|---------------|-------------|------------|--------------|-------------------|
| Placer County | 143,500     | 138,000    | 5,500        | 3.8%              |
| Auburn        | 8,270       | 7,990      | 280          | 3.3%              |
| Lincoln       | 5,450       | 5,200      | 250          | 4.5%              |
| Loomis        | 4,590       | 4,420      | 170          | 3.7%              |
| Rocklin       | 16,720      | 16,120     | 600          | 3.6%              |
| Roseville     | 37,750      | 36,220     | 1,530        | 4.1%              |

Source: California Employment Development Department, Labor Market Information Division, December 2004

### **Personal Income**

Table 3-11 outlines income levels for tracts 213.01, 213.03, 213.04, 214.01 and 214.02. In 2000, 8% of the population in the Study Area lived below the poverty level. Poverty guidelines for 2001 are \$ 17,650 for a family of four. Tract 214.02 had the highest percentage (15%) of people living under the poverty guidelines followed by tract 214.01 that had 8.2% people while tract 213.01 had 6%, tract 213.03 had .5%, and tract 213.04 had 6.9%.

**Table 3-11 Income and Poverty Data for 2000**

|  | <b>Tract<br/>213.01</b> | <b>Tract<br/>213.03</b> | <b>Tract<br/>213.04</b> | <b>Tract<br/>214.01</b> | <b>Tract<br/>214.02</b> | <b>Total</b> |
|--|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|--------------|
| Median Household Income                  | \$56,432                | \$87,347                | \$52,286                | \$41,010                | \$40,995                | -            |
| Median Family Income                     | \$60,129                | \$32,597                | \$24,577                | \$18,192                | \$16,151                | -            |
| Per Capita Income                        | \$23,336                | \$32,597                | \$24,577                | \$18,192                | \$16,151                | -            |
| Persons Below Poverty Status*            | 167                     | 25                      | 328                     | 207                     | 1,073                   | 1,800        |
| Households with Public Assistance Income | 39                      | 23                      | 40                      | 28                      | 181                     | 311          |

\*Poverty guidelines for 1999 are \$ 16,700 for a family of four. Poverty guidelines for 2001 are \$17650 for a family of four. U.S. Census Bureau 2000

### **Fiscal Conditions**

Placer County collected approximately \$63 million in property taxes for the 2001-02 fiscal year in comparison to the \$35.1 million collected in the 1995-96 fiscal year. Property taxes in the City of Lincoln also increased during this period, and accounted for over \$1 million of their \$6 million tax revenue total received in the 2001-02 fiscal year. Due to the increasing residential development in the Study Area, property taxes are expected to continue to increase.

Based on the Study Area's sales tax figures, business activity has decreased over the past few years. Many of the companies now located in Lincoln are of a manufacturing and service nature. There has been a steady decline in sales tax revenue because many shopping centers have emerged in Rocklin and Roseville. However, sales oriented business in Lincoln are expected to rise by 15% to 20% over the next five to ten years which would potentially increase the sales tax revenue.

### **3.1.9 Jobs/Housing Balance**

#### **Regional Jobs/Housing Conditions**

Employment in Placer County is expected to increase by 98% by 2025 from the year 2000 and the employment in neighboring Sacramento County are expected to increase by 45% during that same time frame. Statistics for housing for the same period show that Placer County is expected to increase by 77% while housing in Sacramento County is expected to increase by 40%. Due to Lincoln's proximity to regional job markets such as Roseville and Rocklin, the City of Lincoln will experience an increase in housing to accommodate regional growth. The expected increase in population is likely due to the dwelling units proposed for the Study Area that are primarily concentrated in and around the City of Lincoln. However, the largest planned residential development, Twelve Bridges, will consist of 6,334 age-restricted dwelling units that will potentially increase the percentage of the retired population. However, this is not likely to impact regional jobs or commuting traffic. Although the planned developments have included

approximately 86.4 ha (213.4 ac) of commercial land use and there is still an abundance of vacant industrial land available, it is likely that a large portion of the population will continue to commute to the outlying areas.

### **3.1.10 Existing Travel Patterns**

Currently, SR 65 is the main street serving the community of Lincoln. Most of the businesses in Lincoln are located either on or just off SR 65. City Hall is one block down from SR 65 and the Library and the Pavilions; a community hall, are both generally accessed via SR 65 or SR 193. Outside the business core of the city of Lincoln are residential areas. Figure 1-4, in Chapter 1, shows the circulation system as found in the Lincoln General Plan.

Due to the proximity of the regional job markets in Rocklin, Roseville and Sacramento, commuting on SR 65 will increase thus placing further demand upon the existing highway. According to commuting statistics for 2000, of the 4,698 workers in Lincoln who commuted to work, 3,609 of them drove alone and 749 carpooled. Only 132 workers walked to work and 156 worked at home. The mean travel time to work was 28.6 minutes.

SR 193 provides a link with the community of east Rocklin and Sierra College, a community college.

### **Bicycles & Pedestrians**

Bicycle routes are discussed in Chapter 1, Section 3.6. SR 65 is not included in the adopted bicycle plan for Lincoln; however, the portion of SR 65 from Roseville to SR 193 is included in the Placer County Master Bikeways Plan. This would remain the same after the Bypass was constructed.

SR 65 is a busy road, and pedestrians generally only use this road when their car breaks down. Through the town, however, pedestrian traffic is common.

### **3.1.11 Community Facilities and Services**

Figure 3-11 shows the community facilities such as schools, libraries and fire departments. The town of Sheridan has no facilities such as a Fire Department or library, instead relying on Lincoln's facilities and services.

#### **Schools**

Carlin C. Coppin Elementary, Valley View Elementary, Creekside Oaks Charter Elementary, First Street Elementary and Heritage Elementary Schools are located in Lincoln and Sheridan Elementary School is located in Sheridan. The Glen Edwards Middle School is located in Lincoln as well as three high schools, Lincoln High School, Lincoln High North, and Phoenix High School. The Horizon Instruction Systems

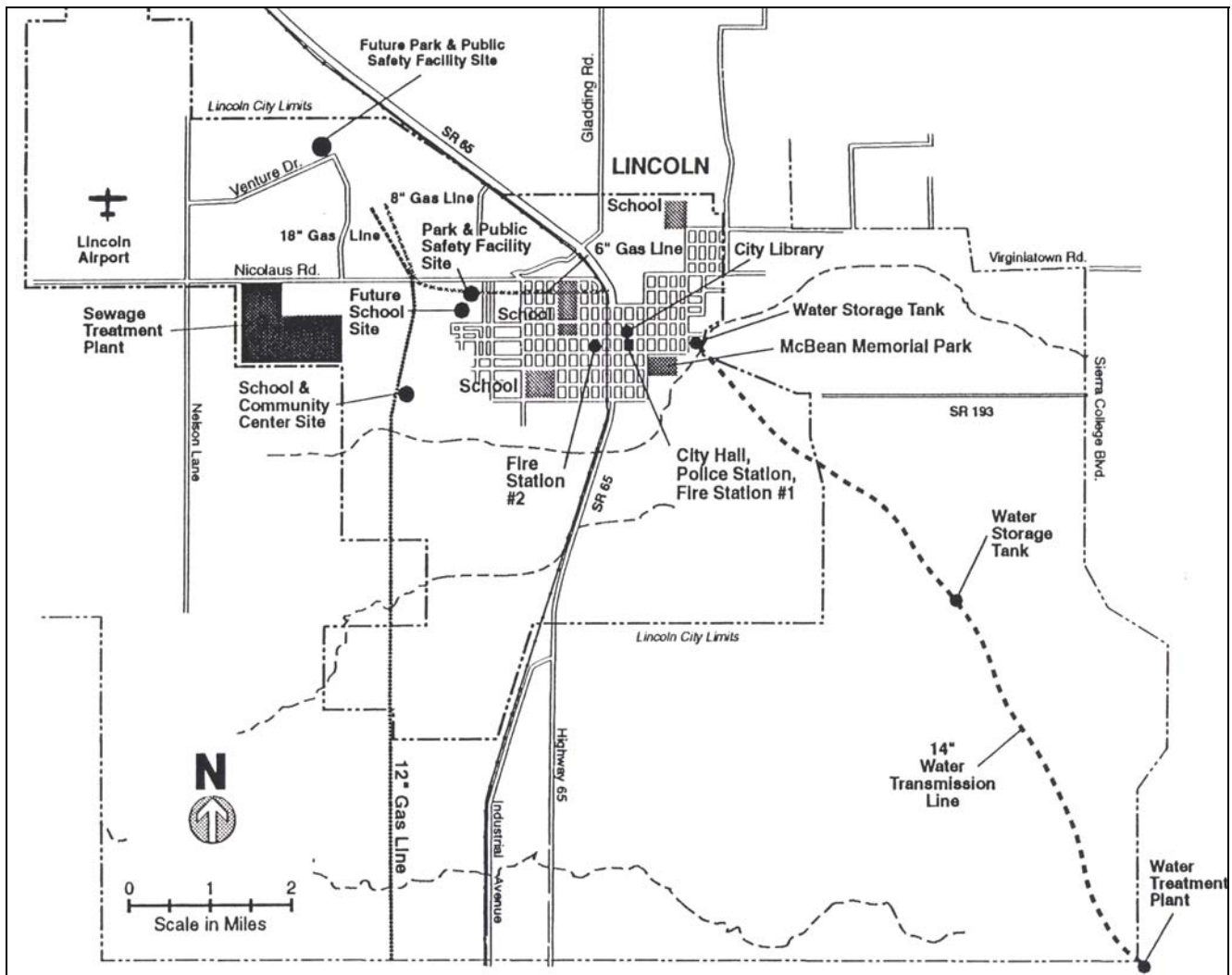
independent correspondence study program serves K-12 students that generally do not live in Placer County although it is located in Lincoln.

### Police and Fire Protection

The area under Placer County's jurisdiction is patrolled by the Placer County Sheriff's Department. The Sheriff's Department is responsible for general law enforcement activities throughout the County. Similarly, the City of Lincoln Police Department has jurisdiction within the City limits and provides general law enforcement.

The South Placer Fire Protection District provides services to areas under the County's jurisdiction. The City of Lincoln's volunteer Fire Department is housed with the City of Lincoln Police Department.

**Figure 3-11 Community Services & Public Facilities**





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## 3.2 GEOGRAPHY AND TOPOGRAPHY

### 3.2.1 Topography

The proposed project is located near the eastern edge of the lower Sacramento Valley. The Sacramento Valley is a broad lowland, approximately 80 km (50 mi) wide in the project area. The Coast Range on the west and the Sierra Nevada Range to the east border the valley. The project area is characterized by gently rolling hills, ranging in elevation from 24 to 46 m (80-150 ft) above sea level, sloping to the north and west toward the Bear and Feather Rivers. Prominent topographic features within the project area include the Auburn Ravine, Markham Ravine and Ingram Slough.

### 3.2.2 Climate

The climate in Lincoln is characterized by hot, dry summers and cool, wet winters, which is typical of the California Central Valley. Average temperatures range from about 27° C (80° F) in summer to 7° C (45° F) in winter, with temperature extremes of 47° C (110° F) in summer and -7° C (20° F) in winter. Annual rainfall averages about 5.6 cm (22 in) per year, with most of it falling between October and March (Lincoln General Plan, 1988).

### 3.2.3 Soils

The soils within the Study Area are predominately of the Fiddymment-Trigo-Rocklin association. The soils in this association occur on gently sloping terraces and strongly sloping sideslopes.

To the east, they adjoin the bedrock areas of the lower foothills. These soils are mostly well drained and developed in granitic alluvium and outwash from the Sierra Nevada Mountains. They are mostly shallow, meeting with claypans or hardpans and have medium runoff and moderate erosion hazard (SACOG 1988b). Soils in this area include Cometa-Fiddymment Complex, Cometa-Ramona Sandy Loams, Kilaga Loam, San Joaquin Sandy Loam, and Xerofluvents (EIP Associates 1992b). The erosion hazard of the soils varies from slight erosion hazard in the floodway fringes to high erosion hazard in the recent alluvium deposits adjacent to stream channels (Caltrans 1999).

The Placer County Natural Resources Conservation District completed a survey of productive soils for Placer County, and identified areas within the Lincoln planning area having prime soils. Major prime soil areas exist adjacent to the Auburn Ravine, north of the Gladding McBean plant, and in the southwestern portion of the planning area. All alternatives will pass through some of the prime soils with Alternatives D1 and D13 passing through a greater amount of the prime soils (Caltrans 1999).

### 3.2.4 Geology

The project site is located in the Sacramento Valley portion of the Great Valley Geomorphic Province on California. This portion of the valley is underlain by unconsolidated older alluvium of Pleistocene and Holocene age. Pliocene to Pleistocene deposits of continentally derived sand, silt, clays and poorly sorted gravel underlie older alluvial deposits. Marine sedimentary rocks yielding saline waters may underlie continental derived sedimentary rocks at depth. The geologic basement of the region is composed of meta-sedimentary and meta-volcanic rocks. Structurally, the consolidated sediments have been folded into a west-dipping homocline formed by the westward tilting of the Sierra Nevada structural block (Ross and Gannaway, 1999).

### 3.2.5 Seismic

Faults in the general region with a moderate to high potential for surface rupture include the San Andreas Fault, approximately 162 km (100 mi) to the west, the Dunnigan Hills Fault located approximately 57 km (35 mi) to the northwest and the Foothills Fault Zone located approximately 16 km (10 mi) to the east. The relevant seismic data is presented in Table 3-12.

**Table 3-12 Faults in Area**

| <b>Fault</b>         | <b>Estimated distance from project</b> | <b>Maximum credible earthquake magnitude on Richter Scale</b> |
|----------------------|--|---|
| Foothills Fault Zone | 16 km East (10 mi)                     | 6.5   |
| San Andreas Fault    | 162 km West (100 mi)                   | 8.0   |
| Dunnigan Hills Fault | 57 km Northwest (35 mi)                | 6.5   |

There is no evidence to indicate that the proposed project is located on identified active faults. Therefore, the potential risk of damage due to fault rupture is considered low.

### Liquefaction

Soil liquefaction is a process by which water-saturated sediment temporarily loses strength and acts as a fluid, like when you wiggle your toes in the wet sand near the water at the beach. This effect can be caused by earthquake. Soils most susceptible to liquefaction are loose, clean and uniformly graded fine-grained sands. Silty sands also liquefy during strong shaking. As noted earlier, the underlying soil is a clay material. Therefore, the potential for liquefaction is considered low.

### 3.3 AIR QUALITY

An Air Quality Report was completed for this project in March 2001. Copies of this report are available for review at the Department of Transportation, District 3 Sacramento office, 2389 Gateway Oaks Dr., Sacramento, CA.

Weather and topography both influence air quality. This region is subject to temperature inversions, trapping pollutants at ground level. Surface inversions 0-152 m (0-500 ft) are most frequent during the winter, while subsidence inversions 305-610 m (1,000-2,000 ft) are more frequent during the summer. Generally, the lower the inversion base height and the greater the rate of temperature increase from the base to the top, the more pronounced will be the effect of the inversion on inhibiting dispersion of pollutants.

This project is located in the Sacramento Valley Air Basin, which is under the jurisdiction of the Placer County Air Pollution Control District (PCAPCD) at the local level and the California Air Resources Board (CARB) at the State level. The U.S. Environmental Protection Agency (EPA) is responsible at the Federal level for the implementation of the Federal Clean Air Act of 1970 and amendments in 1977 and 1990. This act requires the EPA to establish National Ambient Air Quality Standards (NAAQS) in order to protect the public health. These standards as well as State standards are shown in Table 3-13. The Placer County portion of the Sacramento Air Basin is classified as follows: ozone is listed as serious non-attainment for Federal and State level, sulfur dioxide, and nitrogen dioxide are in attainment with both the Federal and State standards; and PM<sub>10</sub> is listed as in attainment for the Federal standard and non-attainment for the State standards.

On April 15, 2004, EPA issued designations on attainment and non-attainment of the 8-hour ozone standard. (<http://www.epa.gov/ozonedenignations/>) EPA also issued a new rule classifying areas by the severity of their ozone conditions and establishing the deadline state and local governments must meet to reduce ozone levels.

Projects included in the MTIP are consistent with Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Plan and are part of the area's overall strategy for providing mobility, congestion relief and reduction of transportation-related air pollution in support of efforts to attain federal air quality standards for the region.

#### ***Ozone***

Ozone is made up of reactive organic gases (ROG) and oxides of nitrogen (NOx), which react in the atmosphere when exposed to sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air

temperature, ozone is primarily a summer air pollution problem. Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. The new ozone standard reduces allowable concentrations from 0.12 parts per million (PPM) averaged over one hour to a standard of 0.08 PPM averaged over an eight hour period.

***Carbon Monoxide***

Carbon monoxide (CO) is a public health concern because it combines readily with hemoglobin thus reducing the amount of oxygen transported in the blood stream. Motor vehicles are the dominant source of CO emissions and produce localized pollution problems. The Sacramento region is currently in attainment (maintenance) for CO.

***Particulate Matter***

Particulate matter of 10 and 2.5 microns or less (PM<sub>10</sub> and PM<sub>2.5</sub>, also known as PM coarse and PM fine) is a health concern because particles these sizes pass deeply into the lungs when inhaled. Those smaller particles reflect a mix of rural and urban sources, including agricultural activities, industrial emissions and dust suspended by automobiles and trucks.

PM<sub>2.5</sub> is considered to be more damaging to human health than PM<sub>10</sub>. Table 3-13 reflects the current standards. Areas within the Study Area have been designated as non-attainment for the PM<sub>10</sub> and PM<sub>2.5</sub> state standards.

Sacramento County is designated as non-attainment for the Federal PM<sub>10</sub> standard, but Placer County is considered Attainment/Unclassified. There are no Federal PM<sub>2.5</sub> non-attainment areas in the Sacramento Metropolitan area, including the Lincoln area. Conformity requirements under the Federal Clean Air Act apply only for ozone in the Lincoln area.

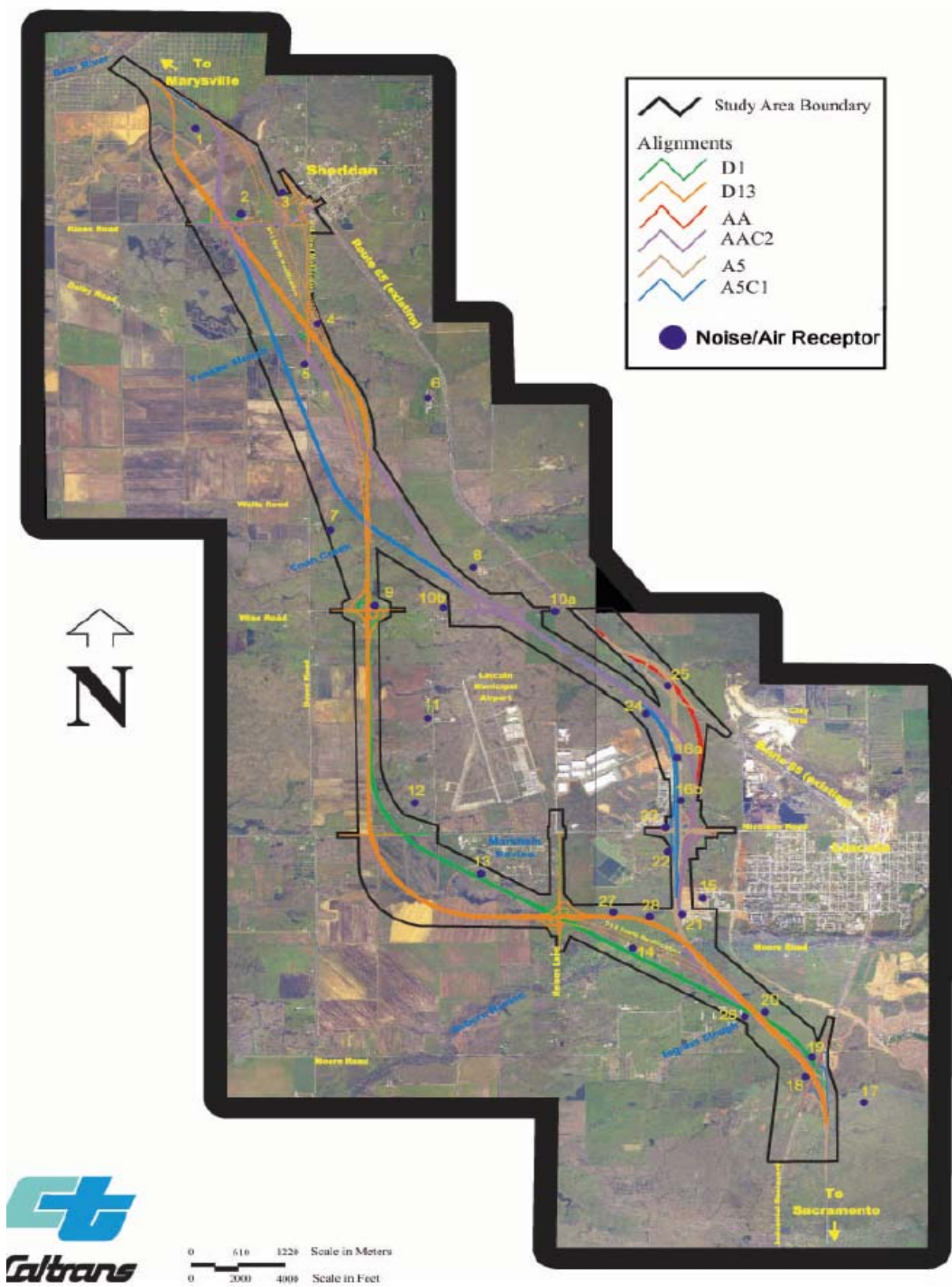
**Table 3-13 Federal and State Ambient Air Quality Standards**

| Ambient Air Quality Standards  |                        |  |   |  |                                   |  |
|--|------------------------|--|---|--|-----------------------------------|--|
| Pollutant  | Averaging Time         | California Standards <sup>1</sup>  |   | Federal Standards <sup>2</sup>                 |                                   |  |
|  |                        | Concentration <sup>3</sup>   | Method <sup>4</sup>                       | Primary <sup>3,5</sup>                         | Secondary <sup>3,6</sup>          | Method <sup>7</sup>                          |
| Ozone (O <sub>3</sub> )  | 1 Hour                 | 0.09 ppm (180 µg/m <sup>3</sup> )  | Ultraviolet Photometry                    | 0.12 ppm (235 µg/m <sup>3</sup> ) <sup>8</sup> | Same as Primary Standard          | Ultraviolet Photometry                       |
|  | 8 Hour                 | 0.070 ppm (137 µg/m <sup>3</sup> )*  |   | 0.08 ppm (157 µg/m <sup>3</sup> ) <sup>8</sup> |                                   |  |
| Respirable Particulate Matter (PM <sub>10</sub> )  | 24 Hour                | 50 µg/m <sup>3</sup>   | Gravimetric or Beta Attenuation           | 150 µg/m <sup>3</sup>                          | Same as Primary Standard          | Inertial Separation and Gravimetric Analysis |
|  | Annual Arithmetic Mean | 20 µg/m <sup>3</sup>   |   | 50 µg/m <sup>3</sup>                           |                                   |  |
| Fine Particulate Matter (PM <sub>2.5</sub> )   | 24 Hour                | No Separate State Standard   |   | 65 µg/m <sup>3</sup>                           | Same as Primary Standard          | Inertial Separation and Gravimetric Analysis |
|  | Annual Arithmetic Mean | 12 µg/m <sup>3</sup>   | Gravimetric or Beta Attenuation           | 15 µg/m <sup>3</sup>                           |                                   |  |
| Carbon Monoxide (CO)   | 8 Hour                 | 9.0 ppm (10mg/m <sup>3</sup> )   | Non-Dispersive Infrared Photometry (NDIR) | 9 ppm (10 mg/m <sup>3</sup> )                  | None                              | Non-Dispersive Infrared Photometry (NDIR)    |
|  | 1 Hour                 | 20 ppm (23 mg/m <sup>3</sup> )   |   | 35 ppm (40 mg/m <sup>3</sup> )                 |                                   |  |
|  | 8 Hour (Lake Tahoe)    | 6 ppm (7 mg/m <sup>3</sup> )   |   | —  |                                   |  |
| Nitrogen Dioxide (NO <sub>2</sub> )  | Annual Arithmetic Mean | —  | Gas Phase Chemiluminescence               | 0.053 ppm (100 µg/m <sup>3</sup> )             | Same as Primary Standard          | Gas Phase Chemiluminescence                  |
|  | 1 Hour                 | 0.25 ppm (470 µg/m <sup>3</sup> )  |   | —  |                                   |  |
| Sulfur Dioxide (SO <sub>2</sub> )  | Annual Arithmetic Mean | —  | Ultraviolet Fluorescence                  | 0.030 ppm (80 µg/m <sup>3</sup> )              | —                                 | Spectrophotometry (Pararosaniline Method)    |
|  | 24 Hour                | 0.04 ppm (105 µg/m <sup>3</sup> )  |   | 0.14 ppm (365 µg/m <sup>3</sup> )              | —                                 |  |
|  | 3 Hour                 | —  |   | —  | 0.5 ppm (1300 µg/m <sup>3</sup> ) |  |
|  | 1 Hour                 | 0.25 ppm (655 µg/m <sup>3</sup> )  |   | —  | —                                 | —  |
| Lead <sup>9</sup>  | 30 Day Average         | 1.5 µg/m <sup>3</sup>  | Atomic Absorption                         | —  | —                                 | —  |
|  | Calendar Quarter       | —  |   | 1.5 µg/m <sup>3</sup>                          | Same as Primary Standard          | High Volume Sampler and Atomic Absorption    |
| Visibility Reducing Particles  | 8 Hour                 | Extinction coefficient of 0.23 per kilometer — visibility of ten miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape. |   | No Federal Standards                           |                                   |  |
| Sulfates   | 24 Hour                | 25 µg/m <sup>3</sup>   | Ion Chromatography                        |  |                                   |  |
| Hydrogen Sulfide   | 1 Hour                 | 0.03 ppm (42 µg/m <sup>3</sup> )   | Ultraviolet Fluorescence                  |  |                                   |  |
| Vinyl Chloride <sup>9</sup>  | 24 Hour                | 0.01 ppm (26 µg/m <sup>3</sup> )   | Gas Chromatography                        |  |                                   |  |
| *This concentration was approved by the Air Resources Board on April 28, 2005 and is expected to become effective in early 2006. |                        |  |   |  |                                   |  |
| See footnotes on next page ...   |                        |  |   |  |                                   |  |
| California Air Resources Board (5/6/05)  |                        |  |   |  |                                   |  |



1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM<sub>10</sub>, PM<sub>2.5</sub>, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM<sub>10</sub>, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m<sup>3</sup> is equal to or less than one. For PM<sub>2.5</sub>, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the EPA.
8. New federal 8-hour ozone and fine particulate matter standards were promulgated by U.S. EPA on July 18, 1997. Contact U.S. EPA for further clarification and current federal policies.
9. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

### Figure 3-12 Noise & Air Receptors



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## 3.4 NOISE

A Noise Impact Report was completed for this project in March 2001. Copies of this report are available for review at the Department of Transportation, District 3 Sacramento office, 2389 Gateway Oaks Dr., Sacramento, CA.

### 3.4.1 Federal and State Regulations, Standards, & Policies

Federal and state regulations, standards and policies relating to traffic noise are discussed in detail in the Department's Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects (Protocol). Transportation projects affected by the Protocol are referred to as Type 1 projects. A Type 1 project is defined in 23 CFR 772 as highway construction on a new location, or the physical alteration of an existing highway that significantly changes either the horizontal or vertical alignment or increases the number of through traffic lanes and is either fully or partially federally funded. FHWA has clarified its interpretation of Type 1 projects by stating that such a project is one that has the potential to increase noise levels at adjacent receivers. Caltrans extends this definition to include state-funded highway projects. The proposed project evaluated in this report is considered a Type 1 project because it involves the construction of a highway on a new location.

### National Environmental Policy Act

NEPA is a federal law that establishes environmental policy for the nation, provides an interdisciplinary framework for federal agencies to prevent environmental damage and contains "action-forcing" procedures to ensure that federal agency decision-makers take environmental factors into account. The FHWA regulations discussed below constitute the federal noise standard. Projects complying with this standard are also in compliance with the requirements stemming from NEPA.

### Federal Highway Administration Regulations

Title 23, Part 772 of the Code of Federal Regulations (23 CFR 772) provides procedures for conducting highway-project noise studies and implementing noise abatement measures to help protect the public health and welfare, supply noise abatement criteria, and establish requirements for information to be given to local officials for use in planning and designing highways. Under this regulation, noise abatement must be considered for a Type 1 project if the project is predicted to result in a traffic noise impact. A traffic noise impact is considered to occur when the project results in a *substantial noise increase* or when the predicted noise levels *approach* or *exceed* the noise abatement criteria (NAC) specified in the regulation. 23 CFR 772 does not



specifically define what constitutes a “substantial increase” or the term “approach” and leaves interpretation of these terms to the individual states.

Noise abatement measures that are reasonable and feasible, and that are likely to be incorporated into the project, will be identified and incorporated into the project's plans and specifications. Table 3-14 summarizes the FHWA noise abatement criteria.

**Table 3-14 FHWA Noise Abatement Criteria (NAC)**

| <b>Activity Category</b> | <b>NAC, Hourly A-weighted Noise Level, dBA Leq(h)</b> | <b>Description of Activities</b>  |
|--------------------------|---|---|
| <b>A</b>                 | 57 Exterior   | Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. |
| <b>B</b>                 | 67 Exterior   | Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.   |
| <b>C</b>                 | 72 Exterior   | Developed lands, properties, or activities not included in Categories A or B above  |
| <b>D</b>                 | --  | Undeveloped lands.  |
| <b>E</b>                 | 52 Interior   | Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.   |

For any soundwalls to be considered reasonable from a cost perspective, the total estimated cost of the wall must be at or below the total allowance calculated for each wall. The reasonable base cost allowance per benefited residence is \$17,000. The cost calculations of the soundwall should include all items appropriate and necessary for the construction of the soundwall, such as traffic control, drainage, and retaining walls.

A minimum of 5 dB of noise reduction must be achieved at impacted receivers for proposed noise abatement to be considered feasible. Other factors may also restrict feasibility, including topography, access requirements for driveways or ramps, presence of local cross streets, other noise sources in the area, and safety considerations.

### **California Environmental Quality Act**

CEQA is the foundation of environmental law and policy in California. CEQA's main objectives are to disclose to decision makers and the public the significant environmental effects of proposed activities and the ways to avoid or reduce those effects by requiring implementation of feasible alternatives or mitigation measures. Under CEQA, a substantial noise increase may result in a significant adverse environmental effect and, if so, must be mitigated or identified as a noise impact for which it is likely that only partial abatement measures (or none) are available. Specific economic, social, environmental, legal and technological conditions may make additional noise attenuation measures infeasible.

**California Streets and Highways Code, Section 216**

Section 216 of the California Streets and Highways code relates to the noise level produced by the traffic on, or by the construction of, a state freeway measured in the classrooms, libraries, multipurpose rooms and spaces used for a public or private elementary or secondary school. The code states that if the interior noise level produced in any of these locations by freeway traffic, or the construction of a freeway, exceeds 52 dBA Leq, the department shall undertake a noise abatement program to reduce the freeway traffic noise level to 52 dBA Leq or less by measures such as installing acoustical materials, eliminating windows, installing air conditioning and constructing sound baffle structures.

**Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects**

The Protocol (California Department of Transportation 1998a) specifies the policies, procedures, and practices for use by agencies that sponsor new construction or reconstruction projects. Noise abatement criteria specified in this document are the same as those specified in 23 CFR 772. The document defines a noise increase as substantial when the predicted noise levels with project implementation exceed existing noise levels by 12 dBA Leq(h). The protocol also states that a sound level is considered to approach an NAC level when the sound level is within 1 dB of the NAC identified in 23 CFR 772. For example, a sound level of 66 dBA is considered to approach the NAC of 67 dBA, whereas 65 dBA is not.

**3.4.2 FIELD MEASUREMENTS**

Ambient noise measurements were conducted to provide an understanding of the existing noise levels at the sensitive receptor locations. These noise levels will be used as a reference noise level to assess the noise impact to the residential area adjacent to the project site. Thirty-one sites were selected for monitoring to represent existing sensitive receptor locations. The measurement sites were selected when one or many residences were either within or close to the project boundaries. Figure 3-12 illustrates the 31 measurement locations and Table 3-16 summarizes the receptors. Ambient noise levels are listed in Table 3-15.

**Table 3-15 Noise Level Measurements <sup>1</sup> on October 5<sup>th</sup> and 6<sup>th</sup> 1999**

| <b>Noise Level Location</b> | <b>Existing Noise (Monitored) Leq dBA</b> | <b>*A5C1</b> | <b>*AAC2</b> | <b>*D1</b>  | <b>*D13</b> |
|-----------------------------|---|--------------|--------------|-------------|-------------|
| NR-1                        | 49.1                                      | 60.6         | 60.5         | 56.8        | 56.8        |
| NR-2                        | 45.6                                      | 60.6         | 62.6         | 57.3        | 57.3        |
| NR-3                        | 54  | 55.2         | 55.2         | 52.9        | 55.0        |
| NR-4                        | 45.6                                      | 53.4         | 55.5         | 60.5        | 60.5        |
| NR-5                        | 51.3                                      | 57.8         | 64.6         | 63.1        | 63.1        |
| NR-6                        | 49.6                                      | 50.3         | 50.7         | 56.6        | 56.6        |
| NR-7                        | 38.1                                      | 58.2         | 51.2         | 55.2        | 57.6        |
| NR-8                        | 48.1                                      | 62.0         | 59.1         | N/A         | N/A         |
| NR-9                        | 36.4                                      | 53.0         | 52.4         | N/A         | N/A         |
| NR-10a                      | 54.4                                      | 64.3         | 63.6         | N/A         | N/A         |
| NR-10b                      | 52.7                                      | 63.8         | 63.2         | N/A         | N/A         |
| NR-11                       | 36.6                                      | N/A          | N/A          | 54.7        | 51.6        |
| NR-12                       | 46  | N/A          | N/A          | 60.5        | 56.2        |
| NR-13                       | 43.3                                      | N/A          | N/A          | <b>68.2</b> | 57.9        |
| NR-14                       | 43.4                                      | N/A          | 53.0         | <b>68.6</b> | 60.1        |
| NR-15                       | 45.6                                      | 62.4         | 60.5         | N/A         | 53.1        |
| NR-16a                      | 47.7                                      | <b>65.9</b>  | 60.7         | N/A         | N/A         |
| NR-16b                      | 47.9                                      | <b>66.2</b>  | 60.1         | N/A         | N/A         |
| NR-17 <sup>5</sup> (8)      | 48.1                                      | 59.6         | 61.3         | 58.6        | 58.1        |
| NR-18 <sup>5</sup> (10a)    | 54.4                                      | <b>70.4</b>  | <b>70.0</b>  | <b>65.7</b> | <b>69.5</b> |
| NR-19 <sup>5</sup> (10a)    | 54.4                                      | <b>66.6</b>  | <b>65.9</b>  | <b>73.7</b> | <b>68.0</b> |
| NR-20 <sup>5</sup> (14)     | 43.4                                      | <b>70.4</b>  | <b>70.3</b>  | 59.1        | 63.2        |
| NR-21 <sup>5</sup> (15)     | 45.6                                      | <b>73.9</b>  | <b>69.6</b>  | 57.0        | 55.6        |
| NR-22 <sup>5</sup> (16b)    | 47.9                                      | <b>72.5</b>  | <b>66.4</b>  | N/A         | N/A         |
| NR-23 <sup>5</sup> (10b)    | 52.7                                      | <b>72.2</b>  | 65.2         | N/A         | N/A         |
| NR-24 <sup>5</sup> (8)      | 48.1                                      | 65.0         | 63.0         | N/A         | N/A         |
| NR-25 <sup>5</sup> (6)      | 49.6                                      | 63.4         | 62.2         | N/A         | N/A         |
| NR-26 <sup>5</sup> (14)     | 43.4                                      | N/A          | N/A          | N/A         | N/A         |
| NR-27 <sup>5</sup> (14)     | 43.4                                      | N/A          | N/A          | 60.2        | <b>73.6</b> |
| NR-28 <sup>5</sup> (14)     | 43.4                                      | N/A          | N/A          | 59.7        | <b>65.9</b> |
| NR-29 <sup>5</sup> (14)     | 43.4                                      | <b>71.0</b>  | <b>69.6</b>  | <b>67.9</b> | <b>65.8</b> |
| NR-30 <sup>5</sup> (14)     | 43.4                                      | <b>70.7</b>  | <b>68.7</b>  | <b>69.1</b> | <b>67.8</b> |
| NR-31 <sup>5</sup> (15)     | 45.6                                      | <b>68.6</b>  | <b>64.6</b>  | N/A         | N/A         |

<sup>1</sup> The L<sub>eq</sub> represents the equivalent continuous sound level and is the numeric value of a constant level that, over the given period of time, transmits the same amount of acoustic energy as the actual time varying sound level. The L<sub>min</sub> and L<sub>max</sub> represent the minimum and maximum noise levels obtained over a period of one second.

\*Modeled

The ambient noise was partly due to either remote or sparse traffic on the existing SR 65, Dowd Road, Riosa Road, Wise Road, Nicolaus Road, Moore Road and Lakeside Drive. Other sources of noise were birds, barking dogs, hens, water flow, wind in branches, remote aircraft and minor carpentry work. Noise levels remain below the allowable noise exposure required by Placer County.

The measured  $L_{eq}$  shown in Table 3-15 is documented as existing ambient noise level. The modeled noise is the noise contribution of the new Lincoln bypass traffic to each receptor location. The modeled future traffic noise was then compared to the measured existing ambient noise. Noise impacts are addressed in Chapter 4, Environmental Consequences.

**Table 3-16 Summary of Receptors**

| Noise Level Location | Location Description   | Type of Development       | No. of Residences | Status of Development         |
|----------------------|--|---------------------------|-------------------|-------------------------------|
| NR-1                 | 6355 North Route 65  | Residential               | 1                 | Existing                      |
| NR-2                 | 100m north of Riosa Road   | Residential               | 9                 | Existing                      |
| NR-3                 | 100 feet from Existing Route 65                                    | Residential               | 1                 | Existing                      |
| NR-4                 | 4710 North Dowd Road   | Residential               | 1                 | Existing                      |
| NR-5                 | 4221 North Dowd Road   | Residential               | 2                 | Existing                      |
| NR-6                 | 700 feet from Existing Route 65                                    | Residential               | 1                 | Existing                      |
| NR-7                 | 2780 Dowd Road   | Residential               | 1                 | Existing                      |
| NR-8                 | 2000 feet from Existing SR 65, 1000 feet from C1 and C2 Alignments | Residential               | 4                 | Existing                      |
| NR-9                 | 200m south of Wise Road  | Residential               | 1                 | Existing                      |
| NR-10a               | Along Wise Road  | Residential               | 2                 | Existing                      |
| NR-10b               | Along Wise Road  | Residential               | 4                 | Existing                      |
| NR-11                | Along Airport Road   | Residential               | 6                 | Existing                      |
| NR-12                | Along Nicolaus Road  | Residential               | 1                 | Existing                      |
| NR-13                | On Rockwell Lane   | Residential               | 28                | Existing                      |
| NR-14                | Along Moore Road   | Residential               | 1                 | Existing                      |
| NR-15                | 400 feet east of C1 and C2 Alignments                              | Residential               | 1                 | Existing                      |
| NR-16a               | North end of El Camino Verde Dr.                                   | Residential               | 17                | Existing                      |
| NR-16b               | 1245 Cobblestone Dr  | Residential               | 12                | Existing                      |
| NR-17                | 2000 feet from Route 65  | Residential               | 1                 | Existing                      |
| NR-18                | Lincoln Crossing   | Residential               | 60                | Planned, Programmed, Approved |
| NR-19                | Lincoln Crossing   | Residential, Commercial   | 54                | Planned, Programmed, Approved |
| NR-20                | Lincoln Crossing   | Residential, School, Park | 20                | Planned, Programmed, Approved |
| NR-21                | 50 feet from Existing SR 65  | Residential               | 54                | Existing                      |
| NR-22                | 50 feet from Existing SR 65, south of Nicolaus Rd.                 | Residential               | 6                 | Under Construction            |
| NR-23                | 50 feet south of Nicolaus Road                                     | Residential               | 28                | Under Construction            |
| NR-24                | 50 feet from C1 Alignment  | Residential               | 1                 | Existing                      |

| Noise Level Location | Location Description                     | Type of Development | No. of Residences | Status of Development                  |
|----------------------|--|---------------------|-------------------|--|
| NR-25                | 50 feet from Existing Route 65           | Residential         | 1                 | Existing                               |
| NR-26                | NW corner of Route 65/Ferrari Ranch Blvd | Residential         | 0                 | Planned, Programmed, Approved          |
| NR-27                | 100 feet North of D13 Alignment          | Residential         | 1                 | Existing                               |
| NR-28                | 100 feet North of D13 Alignment          | Residential         | 1                 | Existing                               |
| NR-29                | 3-D Development                          | Residential         | 23                | Planned, Program, Approved (Fall 2001) |
| NR-30                | 3-D Development                          | Residential         | 40                | Planned, Program, Approved (Fall 2001) |
| NR-31                | Lincoln West Development                 | Residential         | 25                | Planned, Programmed, Approved          |

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## 3.5 WATER QUALITY

The Water Quality Assessment examines the receiving waters associated with each of the alternatives for the project and the potential impacts linked to the construction and maintenance of each alternative. The location of these waters is shown in Figure 3-13. Following is a summary of the Water Quality Assessment, completed in February 1999. The entire document may be reviewed at the Department's District 3 office, 2800 Gateway Oaks Dr., Sacramento, CA.

The City of Lincoln is located between Auburn Ravine and Markham Ravine, both tributaries to the Sacramento River watershed. The receiving waters within the proposed project area include Auburn Ravine, Markham Ravine, Coon Creek, an unnamed tributary to Orchard Creek (all tributaries to the Sacramento River), Ingram Slough (a tributary to Orchard Creek), Yankee Sough (a tributary to the Bear River, which flows into the Sacramento River), and an aqueduct that supplies water for agricultural use. Alternatives AAC2 and A5C1 will cross over Orchard Creek, Ingram Slough, Auburn Ravine and Markham Ravine. Alternatives D1 and D13 also cross an aqueduct operated by the South Sutter Water District. The aqueduct supplies water for agricultural use.

### 3.5.1 Surface Water Resources

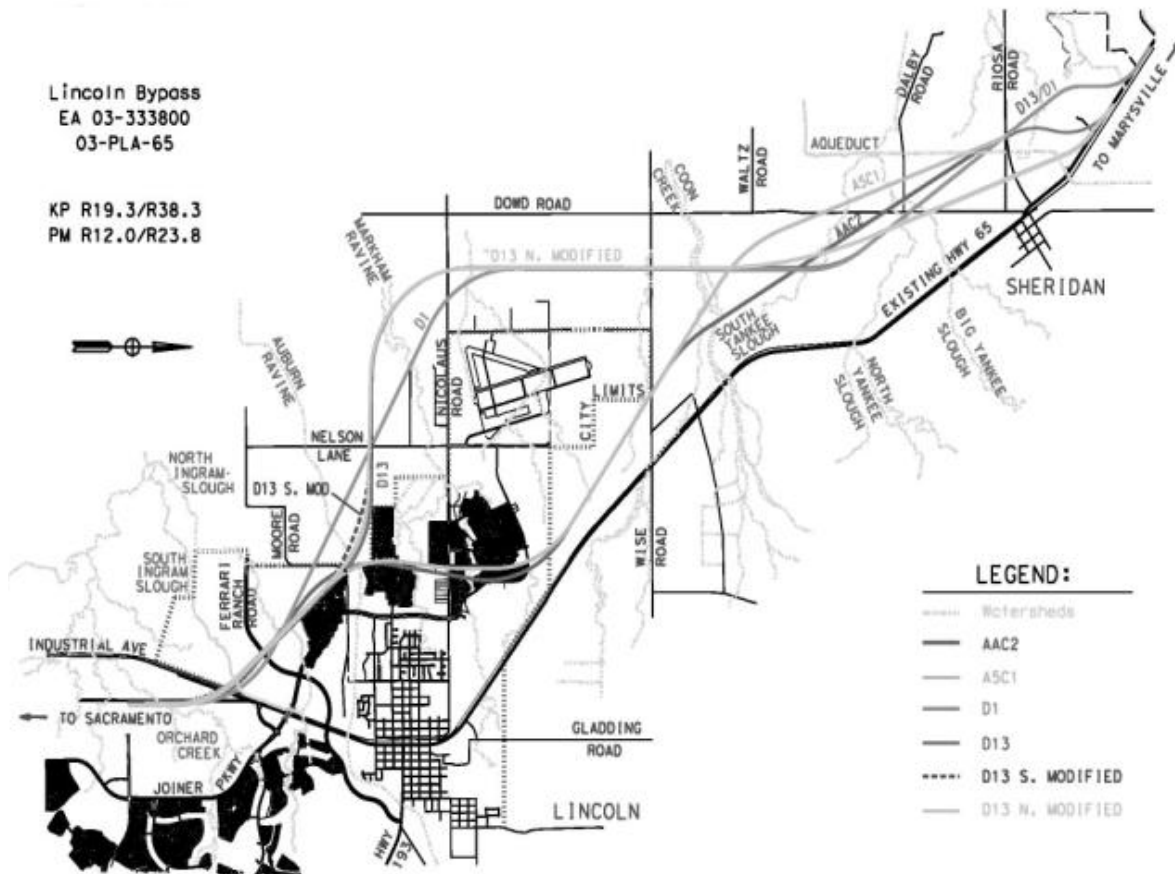
#### Vernal Pools

Several areas within the project are relatively flat and water collects in vernal pools during the wet part of the year. The pools dry during the spring and summer months unless agricultural watering is sufficient to keep the pools wet. During very wet periods, the pools may overflow and drain into the surrounding waterways. All alternatives will affect vernal pools as discussed in the Natural Resources section under "Wetlands."

#### Streams, Creeks and Sloughs

**Orchard Creek** originates just east of the project area, flows westerly across the project area and into Auburn Ravine. Caperton Canal brings some irrigation water to Orchard Creek keeping the flows during a portion of the year higher than the natural flow of the creek.

**Ingram Slough**, which is channeled in the project area, is one of the tributaries to Orchard Creek. The proposed Lincoln Crossing development will divide Ingram Slough into two waterways at the west side of SR 65 to a point west of the proposed bypass. A retention pond is also planned along the northern portion of the slough just west of the proposed bypass (EIP Associates 1992a)

**Figure 3-13 Watersheds in the Lincoln Project Area**

**Auburn Ravine** originates in the foothills east of the project area and flows westerly across the project area. It drains into the Cross Canal and then into the Sacramento River. It meanders through the project area and has a high density of trees lining it.

Currently, Auburn Ravine receives water from the Wise Powerhouse, the City of Auburn Wastewater Treatment Plant and from storm water runoff. Nevada Irrigation District (NID), Placer County Water Agency and the South Sutter Water District all use Auburn Ravine for transmitting water to agricultural users. During the spring and summer months, April through September, agricultural water is added into the flow of Auburn Ravine. Flows in Auburn Ravine will increase when the City of Auburn expands their wastewater treatment plant capacity from 1.67 million gallons per day (MGD) to 2.5 MGD (Jones & Stokes, 1996).

Stream flow is the lowest in Auburn Ravine between October and December when irrigation is not needed and demands for hydropower are low. This varies from a natural flow that would be lowest during the summer months: June, July, August and September. Flow data has been recorded by the NID where SR 65 crosses Auburn Ravine.

**Markham Ravine** originates in the rolling hills to the east of the project area. Markham Ravine is a narrow watercourse that meanders through the project area. Some eroding hillsides along the creek suggest greatly increased flows during the winter months. Markham Ravine also carries irrigation water, making flows higher than normal at some times of the year.

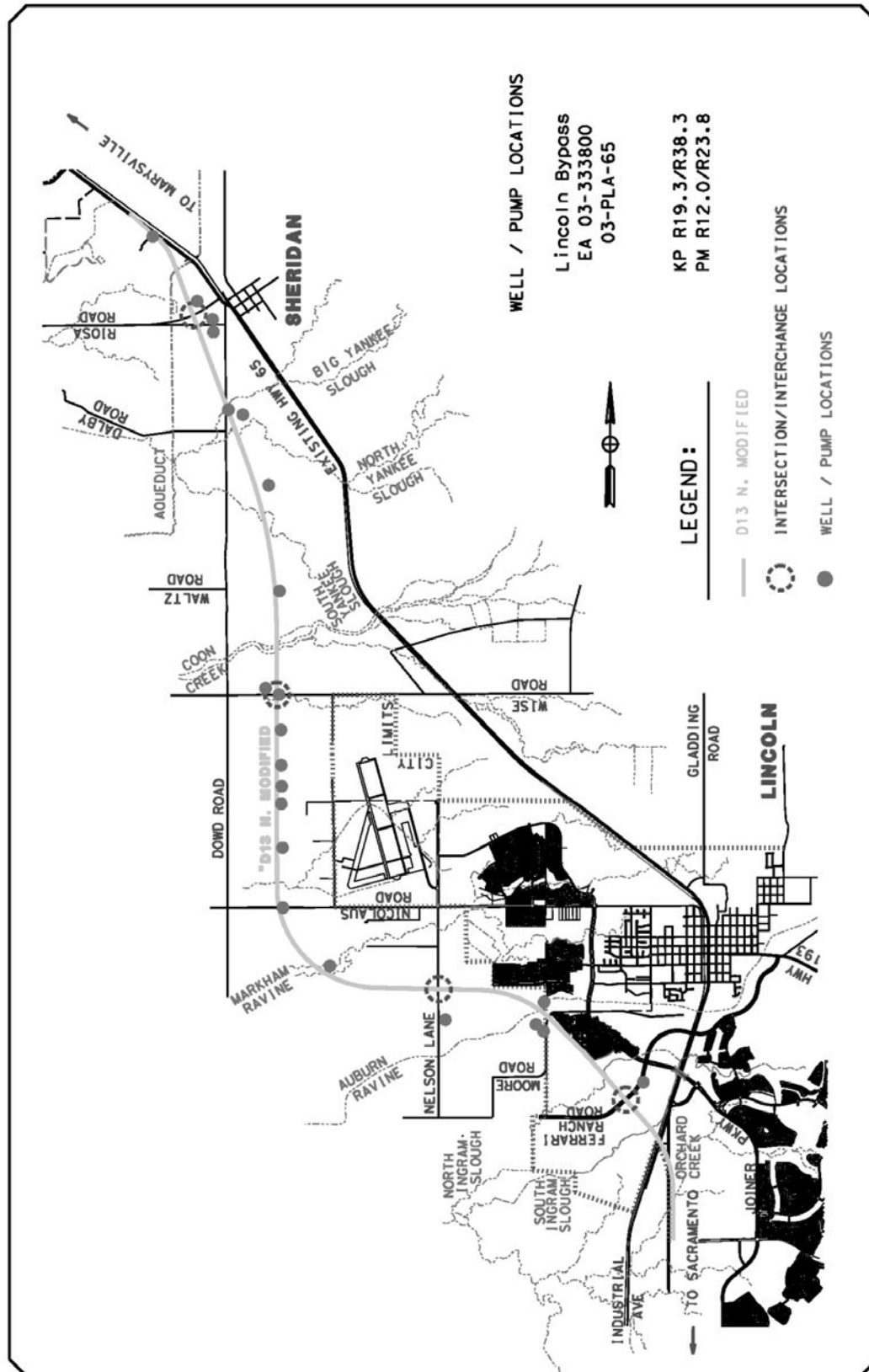
**Coon Creek** originates in the Sierra foothills, flowing westerly across the project area, draining into the Cross Canal and then into the Sacramento River. The creek is heavily wooded in some areas and only sporadic trees line the creek in other areas. Water is supplied to Coon Creek by canals and water is taken from Coon Creek by other canals. It is difficult to know how closely the current flows resemble natural flows.

**Yankee Slough** roughly parallels the Bear River, originating in the rolling hills east of the project. Yankee Slough flows into the Bear River and then to the Sacramento River. The slough does not have trees along its banks. Some of the water flowing in Yankee Slough comes from the Camp Far West canal, affecting seasonal flows.

Orchard Creek, Auburn Ravine, Markham Ravine, Coon Creek and Yankee Slough all receive water from an irrigation canal and/or provide water for irrigation. Consequently, flows no longer conform to natural flows. The watersheds for each of these creeks are relatively small, Coon Creek being the largest. Due to the seasonal nature of precipitation, flow fluctuates significantly from the high flow periods (October through May) to the dry summer months.



**Figure 3-14 Location of Wells in Lincoln Area**



### 3.5.2 Groundwater Hydrology

Available information indicates that groundwater elevation within the City of Lincoln is declining. A study conducted for the Coon Creek/Auburn Ravine watershed show that the average depth to groundwater has increased dramatically from only 7 m (22.9 ft) in 1929, to more than 18 m (59 ft) in 1967, due to over drafting for agricultural irrigation purposes. Present data indicates that groundwater levels have continued to drop at a rate of approximately 0.3 m (one foot) per year since 1967, or about 9 m (29.5 ft) (SACOG 1988b). Some agricultural wells may be affected by the proposed project. A map of wells in the proposed project impact area is shown in Figure 3-14.

### 3.5.3 Municipal Water Supply

Municipal water for the City of Lincoln is supplied through a long-term contract with the Placer County Water Agency (PCWA). Lincoln purchases treated water wholesale from PCWA and distributes the water through its own system. PCWA receives the water from Lake Spaulding and treats the water at PCWA's Sunset Treatment Plant. The plant has a capacity of 5.0 million gallons per day, and supplies water to both the City of Lincoln and the Sunset Industrial Park south of the city. In addition, the city has developed two wells east of the Lincoln Municipal Airport and expects to develop more wells as the demand increases (SACOG 1998a).

### 3.5.4 Beneficial Uses of the Water Resources

Beneficial uses are critical to water quality management in California. State law defines beneficial uses of California's waters that may be protected against quality degradation to include (but not limited to) "...domestic, municipal, agricultural and industrial supply, power generation, recreation, aesthetic enjoyment, navigation and preservation and enhancement of fish, wildlife and other aquatic resources or preserves" (Water Code Section 13050(f)). Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning (Regional Water Quality Control Board Central Valley Region 1998).

The beneficial uses, and abbreviations, listed below are the standard Basin Plan designations (RWQCBCVR 1998).

*Municipal and Domestic Supply (MUN)* - Includes uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.

*Agricultural Supply (AGR)* - Includes uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.

*Industrial Service Supply (IND)* - Includes uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well re-pressurization.

*Industrial Process Supply (PRO)* - Uses of water for industrial activities that depends primarily on water quality.

*Groundwater Recharge (GWR)* - Includes uses of water for natural or artificial recharge of groundwater for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.

*Freshwater Replenishment (FRSH)* - Includes uses of water for natural or artificial maintenance of surface water quantity or quality (e.g., salinity).

*Navigation (NAV)* - Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.

*Hydropower Generation (POW)* - Uses of water for hydropower generation.

*Water Contact Recreation (REC-1)* - Includes uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and SCUBA diving, surfing, white water activities, fishing, or use of natural hot springs.

*Non-Contact Water Recreation (REC-2)* - Includes the uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.

*Commercial and Sport Fishing (COMM)* - Uses of water for commercial or recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.

*Aquaculture (AQUA)* - Includes the uses of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, or harvesting of aquatic plants and animals for human consumption or bait purposes.

*Warm Freshwater Habitat (WARM)* - Includes uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish or wildlife, including invertebrates.

*Cold Freshwater Habitat (COLD)* - Includes uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish or wildlife, including invertebrates.

*Estuarine Habitat (EST)* - Uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds).

*Wildlife Habitat (WILD)* - Includes uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

*Preservation of Biological Habitats of Special Significance (BIOL)* - Uses of water that support designated areas or habitats, such as established refuges, parks, sanctuaries, ecological reserves, or Areas of Special Biological Significance (ASBS), where the preservation or enhancement of natural resources requires special protection.

*Rare, Threatened, or Endangered Species (RARE)* - Includes uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under State or Federal law as rare, threatened or endangered.

*Migration of Aquatic Organisms (MIGR)* - Uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under State or Federal law as rare, threatened or endangered.

*Spawning, Reproduction, and/or Early Development (SPWN)* – Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.

*Shellfish Harvesting (SHELL)* – Uses of water that support habitats suitable for the collection of filter feeding shellfish (e.g. clam, oysters, and mussels) for human consumption, commercial or sports purposes.

The beneficial uses of the Sacramento and Bear Rivers are listed in Table 3-17.

**Table 3-17 Beneficial Uses**

| Surface Water Bodies                             | MUN | AGRI | AGRS | POW | REC-1 | REC-2 | WARM | COLD | MIGR(W) | MIGR(C) | SPWN(W) | SPWN(C) | WILD |
|--|-----|------|------|-----|-------|-------|------|------|---------|---------|---------|---------|------|
| Sacramento River Colusa Basin to I Street Bridge | E   | E    | ~    | E   | E     | E     | E    | E    | E       | E       | E       | E       | E    |
| Bear River                                       | E   | E    | E    | E   | E     | E     | E    | E    | P       | P       | P       | P       | E    |

MUN = Municipal

POW = Industry Power

WARM = Freshwater Habitat Warm

MIGR(C) = Migration Cold

WILD = Wildlife Habitat

Source: RWQCBCVR, 1999

AGR I = Agricultural Irrigation

REC-1 = Recreation Contact

COLD = Freshwater Habitat Cold

SPWN(W) = Spawning Warm

E = Existing Beneficial Uses

AGR S = Ag. Stock Watering

REC-2 = Other Non-Contact

MIGR(W) = Migration Warm

SPWN(C) = Spawning Cold

P = Potential Beneficial Uses

### 3.5.5 Beneficial Uses for Groundwater

Unless otherwise designated by the Regional Water Board, all ground waters in the Region are considered as suitable or potentially suitable, at a minimum, for municipal and domestic water supply (MUN), agricultural supply (AGR), industrial service supply (IND) and industrial process supply (PRO) (RWQCBCVR, 1998).

### 3.5.6 Water Quality Objectives

The Basin Plan lists water quality objectives for a number of constituents. General water quality objectives for surface waters are presented in Table 3-18. Objectives for inorganic and organic chemicals are listed Table 3-19.

**Table 3-18 General Water Quality Objectives for Surface Waters**

| Constituent                  | Description  |
|------------------------------|--|
| <b>Bacterio-logical</b>      | In no case shall coliform concentrations in waters of the Sacramento River Basin or the Bear River exceed the following:<br><br>In waters designated for contact recreation (REC-1), the median fecal coliform concentration based on a minimum of not less than five samples for any 30 day period shall not exceed 200/100ml, not shall more than ten percent of total samples during any 30 day period exceed 400/1000ml.   |
| <b>Chemical Constituents</b> | Waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the limits specified in the California Code of Regulation, Title 22 and listed in the Basin Plan. Waters designated for use as agricultural supply (AGR) shall not contain concentrations of chemical constituents in amounts that adversely affect such beneficial use. Numerical water quality objectives for individual waters are listed in the Basin Plan. |

| Constituent                 | Description   |
|-----------------------------|---|
| <b>Dissolved Oxygen</b>     | <p>Dissolved oxygen concentrations shall conform to those limits listed in the Basin Plan. The monthly median of the mean daily dissolved oxygen (D) concentration shall not fall below 85 % of saturation in the main water mass, and 95 percentile concentration shall not fall below 75 % of saturation. For waters not listed and where dissolved oxygen objectives are not prescribed, the dissolved oxygen concentrations shall not be reduced below the following minimum levels at any time:</p> <p>Waters designated COLD 7.0 ml/L</p> <p>Waters designated SPWN 7.0 ml/L</p> <p>Waters designated WARM 5.0 ml/L</p>   |
| <b>Floating Material</b>    | Water shall not contain floating material in amounts that cause nuisance or adversely affect beneficial uses.   |
| <b>Oil and Grease</b>       | Waters shall not contain oils, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water or otherwise adversely affect beneficial uses.   |
| <b>Pesticides</b>           | <p>No individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses. Discharges shall not result in pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses. Total identifiable persistent chlorinated hydrocarbon pesticides shall not be present in the water column at concentrations detectable within the accuracy of analytical methods approved by the Environmental Protection Agency or the Executive Officer. Pesticide concentrations shall not exceed those allowable by applicable anti-degradation policies (see State Water Resources Control Board Resolution NO. 68-16 AND 40 C.F.R. § 131.12. Pesticide concentrations shall not exceed the lowest levels technically and economically achievable. Waters designated for use as domestic or municipal supply (MUN) shall not contain concentration of pesticides in excess of the Maximum Contaminant Levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15.</p> |
| <b>pH</b>                   | The pH shall not be depressed below 6.5 nor raised above 8.5  |
| <b>Radioactivity</b>        | Radionuclides shall not be present in concentrations that are harmful to human, plant, animal, or aquatic life nor result in the accumulation of radionuclides in the food web to the extent that presents a hazard to human, plant, animal, or aquatic life.   |
| <b>Sediment</b>             | The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.   |
| <b>Settleable Materials</b> | Waters shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.  |
| <b>Suspended Solids</b>     | Waters shall not contain suspended material in concentration that cause nuisance or adversely affect beneficial uses.   |
| <b>Taste and Odor</b>       | Water shall not contain taste and odor producing substances in concentration that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance or otherwise adversely affect beneficial uses.   |
| <b>Temperature</b>          | The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses.  |

| Constituent      | Description   |
|------------------|---|
| <b>Toxicity</b>  | All waters must be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal or aquatic life. This objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances. Analysis of indicator organisms, species diversity, population density, growth anomalies and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board will determine compliance with this objective.  |
| <b>Turbidity</b> | <p>Waters shall be free of changes in turbidity that cause nuisances or adversely affect beneficial uses. Increases in turbidity attributable to controllable water quality factors shall not exceed the following limits:</p> <p>Where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU.</p> <p>Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20%. Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10%. Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10%. In determining compliance with the above limits, appropriate averaging periods may be applied that beneficial uses will be fully protected.</p> |

Source: Regional Water Quality Control Board, Central Valley Region Basin Plan, 1998

**Table 3-19 Water Quality Objectives for Inorganic and Organic Chemicals for the Bear River Hydrologic Unit**

| Chemical                          | Maximum contamination Level | Detail | Chemical                   | Maximum contamination Level | Detail |
|-----------------------------------|-----------------------------|--------|----------------------------|-----------------------------|--------|
| 1,1,1-Trichloroethane             | 0.2 mg/L                    | NA     | Bentazon                   | 0.018 mg/L                  | NA     |
| 1,1,2,2-Tetrachloroethane         | 0.001 mg/L                  | NA     | Benzene                    | 0.001 mg/L                  | NA     |
| 1,1,2-Trichloro-1,2,2-Trifluoroet | 1.2 mg/L                    | NA     | Benzo(a)pyrene             | 0.0002 mg/L                 | NA     |
| 1,1,2-Trichloroethane             | 0.005 mg/L                  | NA     | Beryllium                  | 0.004 mg/L                  | NA     |
| 1,1-Dichloroethane                | 0.005 mg/L                  | NA     | Cadmium                    | 0.0005 mg/L                 | NA     |
| 1,1-Dechloroethylene              | 0.006 mg/L                  | NA     | Carbofuran                 | 0.018 mg/L                  | NA     |
| 1,2,4-Trichlorobenzene            | 0.07 mg/L                   | NA     | Carbon Tetrachloride       |                             | NA     |
| 1,2-Trichlorobenzene              | 0.6 mg/L                    | NA     | Chlordane                  | 0.0001 mg/L                 | NA     |
| 1,2-Dichloroethane                | 0.0005 mg/L                 | NA     | Chromium                   | 0.05 mg/L                   | NA     |
| 1,2-Dichloropropane               | 0.005 mg/L                  | NA     | Cis-1,2-Dichloroethylene   | 0.006 mg/L                  | NA     |
| 1,3-Dichloropropene               | 0.0005 mg/L                 | NA     | Copper                     | 1.3 mg/L                    | NA     |
| 1,4-Dichlorobenzene               | 0.005 mg/L                  | NA     | Cyanide 0.2                | 0.2 mg/L                    | NA     |
| 2,3,7,8-TCDD (Dioxin)             | 0.000003 mg/L               | NA     | Dalapon                    | 0.2 mg/L                    | NA     |
| 2,4,5-TP (Silvex)                 | 0.05 mg/L                   | NA     | Diphthalate (2-ethylhexyl) | 0.004 mg/L                  | NA     |
| 2,4-D                             | 0.07 mg/L                   | NA     | Dibromochloropropane       | 0.0002 mg/L                 | NA     |
| Alachlor                          | 0.002 mg/L                  | NA     | Dichloromethane            | 0.005 mg/L                  | NA     |
| Aluminum                          | 1 mg/L                      | NA     | Dinoseb                    | 0.007 mg/L                  | NA     |
| Antimony                          | 0.006 mg/L                  | NA     | Diquat                     | 0.02 mg/L                   | NA     |
| Arsenic                           | 0.005 mg/L                  | NA     | Endothall                  | 0.1 mg/L                    | NA     |
| Asbestos                          | 7 MFL                       | NA     | Endrin                     | 0.002 mg/L                  | NA     |
| Atrazine                          | 0.003 mg/L                  | NA     | Ethylbenzene               | 0.7 mg/L                    | NA     |
| Barium                            | 1 mg/L                      | NA     | Ethylene Dibromide         | 0.00005 mg/L                | NA     |

| Chemical                      | Maximum contamin-<br>ation Level | Detail          |
|-------------------------------|----------------------------------|-----------------|
| Fluoride                      | 2.4 mg/L                         | <53.7F          |
| Fluoride                      | 2.2 mg/L                         | 53.8F-<br>58.3F |
| Fluoride                      | 2 mg/L                           | 58.4F-<br>63.8F |
| Fluoride                      | 1.8 mg/L                         | 63-9F-<br>70.6F |
| Fluoride                      | 1.6 mg/L                         | 70.7F-<br>79.2F |
| Fluoride                      | 1.4 mg/L                         | 79.3F-<br>90.5F |
| Glyphosate                    | 0.7 mg/L                         | NA              |
| Heptachlor                    | 0.00001mg/L                      | NA              |
| Heptachlor Epoxide            | 0.00001mg/L                      | NA              |
| Hexachlorobenzene             | 0.001 mg/L                       | NA              |
| Hexachlorocyclopent<br>adiene | 0.05 mg/L                        | NA              |
| Lead                          | 0.015 mg/L                       | NA              |
| Lindane                       | 0.0002 mg/L                      | NA              |
| Mercury                       | 0.002 mg/L                       | NA              |
| Methoxychlor                  | 0.04 mg/L                        | NA              |
| Molinate                      | 0.02 mg/L                        | NA              |
| Monochlorobenzene             | 0.07 mg/L                        | NA              |
| Nickel                        | 0.1 mg/L                         | NA              |
| Nitrate (as NO3)              | 45 mg/L                          | NA              |

| Chemical                              | Maximum contamin-<br>ation Level | Detail |
|---------------------------------------|----------------------------------|--------|
| Nitrate + Nitrate (sum<br>as nitogen) | 10 mg/L                          | NA     |
| Nitrate (as nitrogen)                 | 1 mg/L                           | NA     |
| Oxamyl                                | 0.2 mg/L                         | NA     |
| PCBs                                  | 0.0005 mg/L                      | NA     |
| Pentachlorophenol                     | 0.001 mg/L                       | NA     |
| Picloram                              | 0.5 mg/L                         | NA     |
| Selenium                              | 0.05 mg/L                        | NA     |
| Simazine                              | 0.004 mg/L                       | NA     |
| Styrene                               | 0.1 mg/L                         | NA     |
| Tetrachloroethylene                   | 0.005 mg/L                       | NA     |
| Thallium                              | 0.002 mg/L                       | NA     |
| Thiobencarb                           | 0.07 mg/L                        | NA     |
| Toluene                               | 0.15 mg/L                        | NA     |
| Toxaphene                             | 0.003 mg/L                       | NA     |
| trans-1,2-<br>Dichloroethylene        | 0.01 mg/L                        | NA     |
| Trichloroethylene                     | 0.005mg/L                        | NA     |
| Trichlorofluoro-<br>methane           | 0.15 mg/L                        | NA     |
| Vinyl Chloride                        | 0.0005 mg/L                      | NA     |
| Xylenes                               | 1.75 mg/L                        | NA     |

Source: RWQCBCVR 1998

NA = Not Applicable

### 3.5.7 Existing Water Quality

The City of Auburn's Wastewater Treatment Plant (WWTP) had been operating under a cease-and-desist order since 1994 for discharging effluent that exceeded the WWTP's permit limitations into the Auburn Ravine. The WWTP was issued a new wastewater discharge permit on April 11, 2005. However, the WWTP is not able to meet the new discharge limits set by the RWQCB for discharging to the Auburn Ravine, and operates under a new cease and desist order. Recent water quality studies to assess the effects of the City of Auburn's WWTP discharge found that the effluent has little impact on ambient water quality in Auburn Ravine. Significant dilution and high capacity to assimilate organic matter are results of the high dissolved oxygen concentration maintained in the stream as it flows to Lincoln.

Water quality studies have been conducted on Auburn Ravine in conjunction with the City of Lincoln Wastewater Treatment and Reclamation Facility Draft Environmental Impact Report. Data collected between December 1998 through February 1999 at the Joiner Parkway Bridge in Lincoln showed that storm water runoff and higher flows



influence water quality. Although there was low biological oxygen demand, neutral pH, low hardness and dissolved oxygen (DO) typically above 7.0 mg/L, there was moderate turbidity that varied with stream flow conditions and rainfall. Data collected during the summer and fall 1995, shown in Table 3-20, reflect the influences of urban runoff, agricultural activities, septic tanks and other factors (Jones & Stokes, 1999).

**Table 3-20 Concentrations of Conventional Constituents of Concern in Auburn Ravine**

|  | <b>BOD</b><br>(mg/L) | <b>NO<sup>3</sup></b><br>(mg/L N) | <b>NH<sup>3</sup></b><br>(mg/L N) | <b>TKN</b><br>(mg/L N) | <b>TP</b><br>(mg/L P) | <b>TURB</b><br>(NTU) | <b>FC</b><br>(#/100<br>ml) | <b>pH</b> | <b>Temp</b><br>(°C) | <b>DO</b><br>(mg/L) |
|--|----------------------|-----------------------------------|-----------------------------------|------------------------|-----------------------|----------------------|----------------------------|-----------|---------------------|---------------------|
| <b>Samples Collected from Auburn Ravine 7/24/95</b>  |                      |                                   |                                   |                        |                       |                      |                            |           |                     |                     |
| <b>Above town</b>                                    | <3                   | 0.13                              | <0.05                             | <0.5                   | <0.5                  | 3.9                  | 50                         | 6.8-6.9   | 14.7-16.9           | 10.0-10.4           |
| <b>mid reach</b>                                     | <3                   | 0.12                              | <0.05                             | <0.5                   | 0.6                   | 6.6                  | --                         | 6.7-7.6   | 15.9-17.3           | 9.6-9.8             |
| <b>Lower reach</b>                                   | <3                   | <0.11                             | 0.052                             | 0.6                    | 0.9                   | 4.6                  | 500                        | 6.0-7.4   | 20.4-22.7           | 8.0-8.3             |
| <b>Samples Collected from Auburn Ravine 9/14/95</b>  |                      |                                   |                                   |                        |                       |                      |                            |           |                     |                     |
| <b>Above town</b>                                    | <3                   | 0.71                              | 0.064                             | <0.5                   | 0.04                  | 1.8                  | 50                         | --        | --                  | --                  |
| <b>mid reach</b>                                     | <3                   | 0.93                              | 0.053                             | <0.5                   | 0.05                  | 2.0                  | --                         | --        | --                  | --                  |
| <b>Lower reach</b>                                   | <3                   | 0.58                              | 0.064                             | <0.5                   | 0.05                  | 3.4                  | 500                        | --        | --                  | --                  |
| <b>Samples Collected from Auburn Ravine 10/20/95</b> |                      |                                   |                                   |                        |                       |                      |                            |           |                     |                     |
| <b>Above town</b>                                    | <3                   | --                                | <0.05                             | <0.5                   | 0.05                  | 0.72                 | 30                         | 6.9-7.2   | 15.5-15.7           | 7.2-9.3             |
| <b>mid reach</b>                                     | <3                   | --                                | <0.05                             | <0.5                   | 0.08                  | 1.8                  | --                         | 6.8-7.4   | 15.5-17.0           | 7.6-8.5             |
| <b>Lower reach</b>                                   | <3                   | --                                | <0.05                             | <0.5                   | 0.09                  | 4.7                  | 90                         | 7.2       | 17.0-17.0           | 6.2-7.0             |

BOD = biological oxygen demand

DO = dissolved oxygen

NH<sup>3</sup> = ammonia (un-ionized)

NO<sup>3</sup> = nitrates

FC = fecal coliform

Temp. = Temperature

TKN = total Kjeldahl nitrogen

TP = total Phosphorous

Turb = Turbidity

The city has recently undertaken an intensive sampling effort to gain a better understanding of the variability of the trace metal priority pollutants in Auburn Ravine (at Joiner Parkway Bridge). Several trace metals (i.e., cadmium, copper, lead, nickel, and zinc) were present during the various sampling periods at levels that exceed proposed water quality criteria. The May 1998 and January-February 1999 samplings were conducted immediately following storm events and the levels of pollutants in these samples may be characteristic of transient storm-related inputs of urban pollutants. More recent data using clean techniques show much lower values for dissolved metals, with none of the values exceeding proposed regulatory criteria (Jones & Stokes, 1999).

Sources of pollutants in the Auburn Ravine watershed include both point sources of pollutants (e.g., the City of Auburn's WWTP) and non-point sources of pollutants (e.g., agricultural and urban runoff). The City of Auburn's wastewater discharge constitutes the largest single known source of wastewater effluent entering directly into Auburn Ravine. The percentage contribution from Auburn's WWTP is lower in the dry season as a result of larger releases of water into the channel by PG&E and PCWA. In the dry season, Auburn's effluent has typically accounted for 6.8% of the flow in October and 1.8% in July (Jones & Stokes, 1999).

In the Sacramento Valley, there is a natural weather pattern of a long dry period from May to October. During this seasonal dry period, pollutants contributed by vehicle exhaust, vehicle and tire wear, crankcase drippings, spills and atmospheric fallout accumulate within a watershed. Precipitation during the early portion of the wet season (November to April) displaces these pollutants into the storm water runoff, resulting in high pollution concentrations in the initial wet weather runoff. A study conducted by the RWQCB in Sacramento, California (Larry Walker & Associates, 1990) revealed that during the rainy season, the first flush of heavy metals and hydrocarbons occurred during the first five inches of seasonal rainfall. Trace metal and hydrocarbon concentrations then remained largely static in subsequent storm events. Some sources of dry weather runoff constituent pollutants included commercial and domestic irrigation, general wash off, groundwater infiltration and illegal discharges (EIP Associates 1992a).

The State of California, in accordance with Section 303(d) of the Clean Water Act, has submitted to the State Water Resources Control Board a list of impaired waters. The 2002 list mentions the Lower Bear as having Diazinon as a pollutant, likely from agricultural sources with a medium Total Maximum Daily Loads (TMDL) priority. The Sacramento River from Red Bluff to Knights Landing has unknown toxicity from an unknown source with a low TMDL priority. There was no specific information on the Upper Coon or Upper Auburn watersheds.

For the section of the Sacramento watershed where the project is located, parameters of concern include unknown toxicity, mercury and Diazinon. The pollution sources were listed as agriculture and resource extraction.

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### 3.6 FLOODPLAIN

Caltrans conducted a Floodplain Hydraulic Study (FHS) on the project area. The FHS was updated in December 1999. This document is available for review at 2389 Gateway Oaks Dr., Sacramento, CA 95833. The FHS concluded that the Lincoln Bypass floodplain encroachments are unavoidable due to the preferred alignment's north south

orientation crossing the east/west drainage patterns of the area. The existing SR65 passes through areas subject to 100-year floods and encroaches upon the 100-year floodplain at Auburn Ravine, Markham Ravine and Coon Creek. The Preferred Alignment crosses areas subject to 100-year floods at Auburn Ravine, Markham Ravine, Coon Creek and North Yankee Slough. Waterway crossings that are not within the floodplain boundaries include Ingram Slough, Airport Creek, South Yankee Slough, Big Yankee Slough and the South Sutter Water District Aqueduct. Ingram Slough has recently been divided into two reaches; these are North Ingram and South Ingram Slough. FEMA has mapped 100-year floodplains along most of the creeks in the project area. At the time of the study, the D13 North Modified alternative was not one of the alignments studied in the FHS, however, the D13 Alignment is very similar to D13 North Modified at the waterway crossings; therefore the information is applicable.

Caltrans conducted a Final Hydraulics Report (FHR) in September 2004. The FHR assists Caltrans in sizing the structures, determining scour elevations and identifying hydraulic problems that could impact the design and construction of the proposed bridges. The floodplains are shown in Figure 4-6 in Chapter 4. The flood plain widths and base-flood elevations at each of the proposed waterway crossings are shown in Table 3-21.

**Table 3-21 Widths and Base Flood Elevations**

| <b>WATERWAY</b>     | <b>FLOODPLAIN WIDTH (FHS)</b> | <b>WATER SURFACE ELEVATION (FHR) 100-Year event</b> |
|---------------------|-------------------------------|---|
| South Ingram Slough | N/A                           | 40.1m   |
| North Ingram Slough | N/A                           | 41.1m   |
| Auburn Ravine       | 305m (1000 ft)                | 39.9m   |
| Markham Ravine      | 92m (300 ft)                  | 32.34m  |
| Airport Creek       | N/A                           | 31.7m   |
| Coon Creek          | 1128m (3700 ft)               | 32.3m   |
| South Yankee Slough | N/A                           | 29.3m   |
| North Yankee Slough | 213m (700 ft)                 | 28.2m   |
| Yankee Slough (Big) | N/A                           | 28.2m   |
| SSWD Aqueduct       | Not in floodplain             | N/A   |

Source: Hydraulic Study Update

\*Similar for D13 N. Mod

During times of high flows, water backs up along man made barriers such as the existing railroad and highway bridges on Auburn Ravine. The low area along the railroad tracks and SR 65 fills with water during wet winters. FEMA has mapped 100-year floodplains along all of the creeks in the project area (See Figure 4-6 in Chapter 4, for a map of floodplain encroachments.). The levee on the north side of Auburn Ravine, on the Scheiber Ranch, attests to the potential for flooding in the low sloping flat areas. In addition, the FEMA maps show SR 65 as a major impediment to the flow of water for

a 100-year flood event for Markham Ravine. Flooding may occur downstream in Sutter County during wet events (SACOG 1988b, FEMA maps).

Natural and beneficial floodplain values exist at Auburn Ravine and Coon Creek due to their perennial flow. These values are relatively diverse. The primary values that exist in the vicinity of the proposed project alternate alignments are as follows:

- Natural habitat for fish, wildlife, and native riparian vegetation
- Open space
- Recreation
- Ground water recharge
- Scenic beauty

These values also exist at Markham Ravine and Yankee Slough, but to a lesser degree due to the absence of significant surface flow during the summer and fall of most years.

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## 3.7 NATURAL RESOURCES

A Natural Environment Study Report was completed for this project in August 2000. Copies of this report are available for review at the Department of Transportation, District 3 Sacramento office, 2389 Gateway Oaks Dr., Sacramento, CA.

### 3.7.1 Introduction

The Lincoln Bypass Study Area has been substantially altered during a long history of agricultural and industrial land use. Figure 3-15 outlines the Study Area. In 1998, about 9 % of the Study Area had been developed and about 43 % converted to some form of agricultural production (row crops, rice, orchards, etc.) Much of the drainage through the area have been channelized or otherwise altered. Levees have been constructed to contain floodwaters or to retain water for rice farming. Many drainages appear to be conveying supplemental irrigation water. Cattle grazing have also taken a toll on the natural environment in the Study Area.

More recently, residential development has accelerated in the project area, especially in the vicinity of Joiner Parkway. New housing is also under construction south of Nicolaus Road at the intersection of Lakeside Drive and north of Nicolaus Road to the east of Nelson Lane. Many areas now being developed as residential subdivisions were likely in some form of agricultural use previously.

### 3.7.2 Agency Coordination

This section summarizes the responsibilities of key agencies involved in the review of the Natural Environment Study Report (NESR) and related project documents for this project. Coordination with the agencies is also discussed. Copies of correspondence with the agencies are included in the Comments and Coordination Chapter, Chapter 7.

#### **Environmental Protection Agency (EPA)**

EPA has primary responsibility for administration of the Clean Water Act and oversight authority on 404 permitting issues. EPA's 404(b)(1) guidelines are the substantive criteria used by the Corps in evaluating discharges of dredged or fill material into waters of the United States. EPA is also a signatory agency to the 1993 NEPA/404 Integration Memorandum of Understanding (MOU).

EPA has been involved in the development of the draft Alternatives Analysis for the SR 65 Lincoln Bypass, and has concurred with the proposed project purpose and range of alternatives. The Alternatives Analysis identified the "Least Environmentally Damaging Practicable Alternative" (LEDPA). Written agreement that the preferred alternative is the LEDPA is required from USACE and EPA. The LEDPA concurrence was obtained from EPA on July 9, 2003.

EPA has reviewed the Draft Conceptual Mitigation and Monitoring Plan that was submitted in December 2004 and provided preliminary concurrence on December 12, 2004. The letter is included in Appendix E.

#### **U.S. Army Corps of Engineers (USACE)**

Under Section 404 of the Clean Water Act, the USACE regulates the discharge of dredged or fill material into waters of the U.S. A Section 404 permit from the USACE will be required for the project to authorize the discharge of dredged or fill material into vernal pools and other wetlands and regulated waters associated with roadway construction. The USACE is also a signatory agency to the NEPA/404 Integration MOU.

A wetland verification was completed for the project impacts, however, that verification expired in 1991. Caltrans met with the USACE and requested that the expired verification be adequate for use in comparing impacts until a preferred alternative is chosen. At that time, a new wetland delineation and verification would be performed. The USACE agreed to this approach. (Meeting with USACE on March 11, 1999). A new Wetland Delineation was submitted to the USACE in February 2004 and is awaiting final approval.

USACE concurred with the LEDPA on August 8, 2003 during the NEPA/404 process and has given concurrence on the Draft Habitat Mitigation and Monitoring Plan (HMMP) on December 27, 2004. (See Appendix E for copy of concurrences) Caltrans

submitted a revised Wetland Delineation to USACE in March 2004 for re-verification. The 404 permit was also submitted to USACE in March 2004 for review and comment. Caltrans will need to obtain concurrence on the final HMMP as well as a re-verification of the Wetland Delineation before USACE will issue a permit to Caltrans.

**Regional Water Quality Control Board (RWQCB)**

A Section 401 Water Quality Certification or Waiver from the RWQCB is required in conjunction with the Section 404 permitting process. A 401 certification or waiver will be required before the 404 permit is issued. Application to the RWQCB is generally made after the environmental document is complete.

**U.S. Fish and Wildlife Service (FWS)**

Under the Fish and Wildlife Coordination Act of 1958, Federal agencies are required to coordinate during project planning stages with FWS and with the State agency responsible for fish and wildlife resources on activities that modify any body of water. Under Section 7 of the Federal Endangered Species Act (FESA), Federal agencies are required to consult with FWS on any action that “may affect” a Federally listed threatened or endangered species or designated critical habitat. FWS is also a signatory agency to the NEPA/404 Integration MOU and has concurred with the proposed project purpose and range of alternatives evaluated for the project.

In February 2004, Caltrans began discussing the project and the Section 7 consultation with FWS. During the next several months Caltrans, FHWA and FWS worked towards satisfying the requirements of the Section 7 consultation process. FWS issued a Biological Opinion (BO) on February 2, 2005 (Appendix J). The BO outlines requirements to avoid jeopardizing the continued existence of those species that are impacted by the project.

**California Department of Fish and Game (CDFG)**

CDFG, through provisions of Sections 1602 of State of California Administrative Code, is empowered to issue agreements for any alteration of a river, stream or lake where fish or wildlife resources may adversely be affected. Streams (and rivers) are defined by the presence of a channel bed and banks, and at least an intermittent flow of water. CDFG regulates wetland areas only to the extent that those wetlands are part of a river, stream or lake as defined by CDFG.

Coordination with CDFG will be necessary under the Fish and Wildlife Coordination Act, as described above, and under the California Endangered Species Act for potential impacts to State listed species. In addition, a Section 1602 Streambed Alteration Agreement will be required from CDFG to authorize work in streams and other water bodies. CDFG will also be involved in the review of project environmental

documents and in the 404 permitting process as a reviewing agency on the USACE Public Notice.

### **National Oceanic and Atmospheric Administration (NOAA)**

Under Section 7 of the Federal Endangered Species Act, Federal agencies are required to consult with NOAA Fisheries on any action that “may affect” a Federally listed threatened or endangered species or designated critical habitat for which NOAA has responsibility. For the Lincoln Bypass project, NOAA has responsibility for reviewing project effects to anadromous fish.

A “may affect, not likely to adversely effect” determination for the threatened Central Valley steelhead under Section 7 of the Endangered Species Act was made by Caltrans. In addition, Caltrans determined that the project would “not adversely affect” and Essential Fish Habitat pursuant to the provisions of the Magnuson-Stevens Fishery Conservation and Management Act (MSA). These determinations were submitted to NOAA Fisheries on May 10, 2004 and Caltrans received concurrence on May 19, 2004.

### **3.7.3 Fish and Wildlife**

The plant communities in the Study Area provide habitat for a variety of fish and wildlife resources. The following sections describe the wildlife habitats and species expected to occur in these habitats. A complete list of fish and wildlife species observed in the project area can be found in Appendix F.

#### **Aquatic Habitat**

Aquatic habitats in the Study Area include open water associated with creeks, reservoirs and stock ponds, flooded rice fields, backwater sloughs, vernal pools/marshes and permanent/seasonal marsh and irrigation canals. The best-developed aquatic habitat in the Study Area is associated with the large marsh complexes at the west end of Markham Ravine and Bull Marsh, and along the primary drainages (Auburn Ravine, Markham Ravine, Coon Creek, Yankee Slough). The hydrology of most of the aquatic habitats in the Study Area is influenced to some degree by agricultural diversions, irrigation pumping, return flows, and wastewater discharges.

Vertebrate species observed, or expected to occur, in aquatic habitats in the Study Area include beaver, river otter, muskrat, northern pond turtle, common garter snake, Pacific tree frog and bullfrog. Aquatic habitats in the Study Area also support a resident warm water fishery including both introduced and native species. Based on sampling conducted by Beak in 1990, Auburn Ravine and Coon Creek are dominated by native fish species including Sacramento squawfish and Sacramento sucker. Green sunfish, carp and Pacific lamprey were also recorded. Markham Ravine, Ingram Slough and Yankee

Slough support a primarily introduced fishery including mosquito fish, green sunfish, carp and bigscale logperch.

Freshwater marsh is important for many wildlife species, particularly waterfowl and shorebirds. Freshwater marsh and flooded rice fields in and near the Study Area provide habitat for thousands of migrating waterfowl during the winter. Biologists observed between 15,000 and 20,000 birds, primarily ducks, in these areas during the early March 2000 surveys. Marsh areas are also important in nutrient absorption functions that improve water quality.

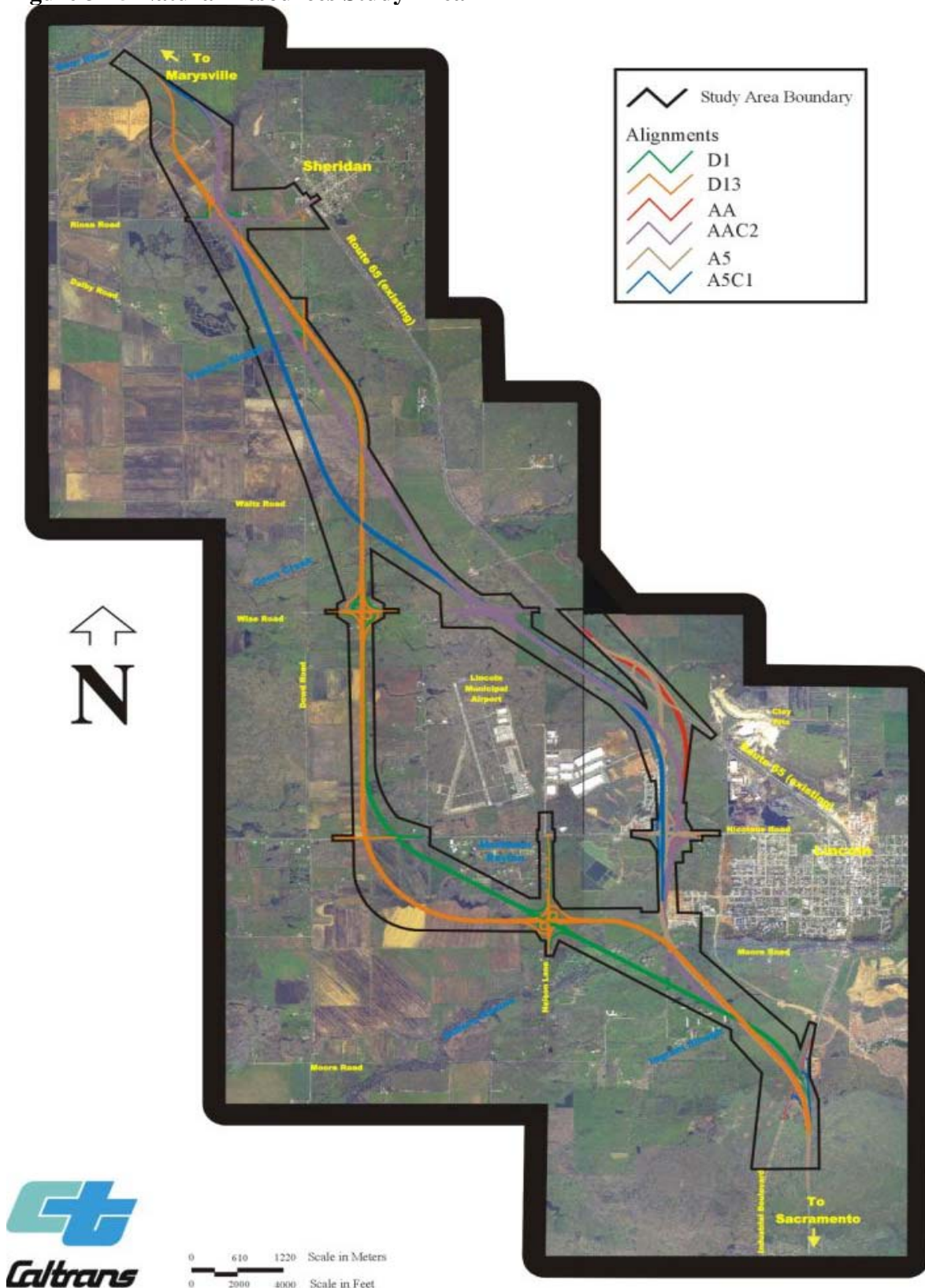
Small numbers of chinook salmon were observed in Auburn Ravine, Coon Creek and Ingram Slough. Although believed to be stocked fish, it is possible that fall run chinook salmon and Central Valley steelhead migrate through the Study Area. The Study Area does not provide suitable spawning habitat (gravel beds) for these species.

### **Terrestrial Habitat**

Terrestrial habitats in the Study Area include buildings and other structures, agricultural fields, rice fields, orchards, grasslands, oak woodlands and mixed riparian forest. Structures, buildings and landscaped areas provide low-quality wildlife habitat, primarily exploited by those species adapted to human disturbances. Barns and other outbuildings may provide habitat for bats (big brown bat, Mexican free-tailed bat) and barn owls, while a variety of structures provide nesting sites for swallows.



Figure 3-15 Natural Resources Study Area



Agricultural land provides habitat for small mammals and birds, including many of the species listed above. Once harvested, agricultural fields provide foraging opportunities for raptors, such as northern harrier, white-tailed kite and Swainson's hawk. Rice fields, which are extensive both within and west of the project area, pond large areas of water and provide good quality waterfowl and wading bird habitat. Orchards may provide cover and foraging habitat for many bird species also commonly found in woodlands and other habitats in the Study Area, however, mowing, plowing, spraying, and harvesting are activities which will deter normal cover and foraging by bird species.

Wildlife use of non-native grasslands is similar to agricultural lands, providing habitat for a wide variety of small mammals, songbirds, raptors and reptiles. Mixed oak woodland provides high-value wildlife habitat for a variety of bird species and some mammals.

Mixed riparian forest, especially where well developed, is one of the most important habitats for wildlife in the project area. The structural complexity of the habitat provides a variety of foraging, resting and nesting opportunities for many species, including a number of special status species. Many of the species found in oak woodlands also occur in the riparian forest.

The riparian communities along Auburn Ravine and Coon Creek provide relatively unobstructed wildlife corridors through the Study Area. These corridors are likely used by a number of wildlife species for crossing through the developed areas around Lincoln. Existing SR 65, the UPTC tracks and a number of secondary roads and farm roads cross these corridors. Existing SR 65 is immediately adjacent to the UPTC tracks through most of the Study Area. The main drainage: Auburn Ravine, Markham Ravine and Coon Creek, run under the highway and railroad via culverts.

#### **3.7.4 Plants**

Table 3-22 provides a breakdown of the plant communities and other land uses occurring in the overall Study Area as of 1998. The percentage of each community relative to the total acreage within the Study Area is also given. A list of all plant species observed in the Study Area is included in AppendixF. Figure 3-16 provides an aerial overview of the plant communities in the Study Area.

**Table 3-22 Plant Communities Occurring in the Study Area**

| <b>Comm-unity</b>            | <b>Area in Hectares (acres)</b> | <b>% of Study Area</b> | <b>Description</b>   |
|------------------------------|---------------------------------|------------------------|--|
| <b>Developed Disturbed</b>   | 175.0 ha<br>432 ac              | 8.7 %                  | Included in this category are developed areas such as roadways, buildings and other structures, adjacent lots as well as undeveloped areas that have been severely disturbed by grading or other earth-disturbing activity. Vegetation is typically limited to ruderal species.  |
| <b>Agricultural Lands</b>    | 855.0 ha<br>2,111 ac            | 42.7 %                 | Agricultural land, a dominant community type in the Study Area, includes all row crops, rice fields and orchards. Also included in this category are irrigation canals, ditches, small reservoirs, ponds, and similar areas directly associated with production of rice or other crops. Fallow fields are included in this community provided they are obviously part of an ongoing agricultural operation. Agricultural land occurs throughout the project area with the largest contiguous expanses located west of the Lincoln Airport and north of Wise Road.  |
| <b>Nonnative Grassland</b>   | 257.3 ha<br>635 ac              | 12.8 %                 | Nonnative grassland is common in the Study Area. Vegetation in nonnative grassland is dominated by annual grasses and forbs including wild oats, soft chess, rigput brome, medusa grass, filaree and yellow star thistle. Included in this community type are fallow agricultural fields that have been fallow for so long as to be indistinguishable from nonnative grassland. Annual grassland that contains vernal pools and vernal pool complexes are not included in this category.   |
| <b>Mixed Oak Woodland</b>    | 49.5 ha<br>122 ac               | 2.5 %                  | Valley oak and blue oak are the dominant trees, with interior live oak also common. Mixed oak woodland in the project area is generally open and contains an understory of nonnative grassland. These woodlands are often found on high terraces near drainage features, but also occur independent of any significant water source. The largest contiguous oak woodland in the Study Area occurs just west of Joiner Parkway, both north and south of Nicolaus Road. Oak woodland also occurs further west along Nicolaus Road and south of Auburn Ravine near Moore Road.  |
| <b>Mixed Riparian Forest</b> | 22.6 ha<br>60 ac                | 1.1 %                  | <p>The major drainage in the project area (Auburn Ravine and Coon Creek) support a mixed riparian forest typically dominated by valley oak but also including several other tree species, often as codominants. Dominant overstory species include valley oak, California black walnut and Goodding's willow. Other tree species include English walnut, Fremont cottonwood, black cottonwood, white alder, interior live oak, sandbar, arroyo and red willow. Understory species in the mixed riparian forest include Himalayan blackberry, mugwort, creeping wildrye, California wild grape, Baltic rush, buttonwillow, California rose and others.</p> <p>The vegetative complexity of the riparian community depends on the structural complexity of the floodplain, which often varies along the drainages. Where stream banks are deeply incised (typical in many reaches); oaks, walnuts and other trees typically occur in a narrow band along upper banks with nominal understory; the streambed supports little vegetation in these areas. In reaches with well-developed terraces, sandbar and other willows typically occupy the lower terraces with a variety of riparian species on the middle terraces and oaks along the upper banks. These areas generally support a well-developed understory.</p> <p>Riparian corridors in the project area are heavily used by cattle, and the plant community reflects this use. In the more intensively grazed areas, the understory is significantly reduced and few seedling trees occur. Deeply incised banks may also be a result of cattle grazing. None of the riparian corridors are free of impacts; Auburn Ravine appears to be the most highly degraded.</p> |

| Comm-<br>unity  | Area in<br>Hectares<br>(acres) | % of<br>Study<br>Area | Description   |
|---|--------------------------------|-----------------------|---|
| Valley Freshwater Marsh   | 56.0 ha<br>138 ac              | 2.8 %                 | <p>Perennial or nearly perennial slow moving or standing water is the common element of all freshwater marsh habitat. In deeper water areas, this community is dominated by cattail and bulrush, often associated with floating mats of water primrose. In shallower water, and on saturated banks, several species of rush, spikerush and sedge are common along with nutsedge, smartweed, dallis grass and Bermuda grass. Thickets of willow occur occasionally within marsh areas and are considered part of the marsh habitat. Valley freshwater marsh intergrades with open water in deeper waterbodies and with vernal marsh in shallower water areas.</p> <p>Valley freshwater marsh habitat in the project area occurs naturally in slow-moving creeks and sloughs (e.g., Yankee Slough), ponds, irrigation and roadside ditches and backwater areas of the larger drainages. The most extensive areas of valley freshwater marsh occur in Markham Ravine south of Nicolaus Road and at Bull Marsh in the northwest portion of the project area.</p> <p>Due to the long history of grazing and water diversions in the project area, much of the valley freshwater marsh habitat is degraded and thoroughly invaded by nonnative plant species. Portions of the Study Area support vegetation characteristic of valley freshwater marsh but are truly agricultural lands or disturbed areas that support this vegetation due to artificial water sources. Areas fitting this description were mapped as agricultural land or disturbed areas since they are not true valley freshwater marsh communities.</p> |
| Great Valley Willow Scrub   | 1.1 ha<br>2.8 ac               | 0.06 %                | <p>Great Valley willow scrub only occurs in a few locations within the project area. Vegetation in this community generally consists of thickets of willow and Fremont cottonwood with little to moderate understory. Understory vegetation can include annual grasses and forbs, as well as shrub cover such as California rose and California blackberry. This community is always associated with a water source and often occurs adjacent to valley freshwater marsh.</p>   |
| Grassland/<br>Northern Hardpan<br>Vernal Pool Complex             | 561.4 ha<br>1,386 ac           | 28.0 %                | <p>Vernal pools are seasonal wetlands that pond water for short periods during the winter and early spring due to an impermeable, subsurface layer that retards percolation. Vernal pools generally occur in nonnative grassland as part of a complex that includes the pools and contributing watershed interconnected through a series of vernal swales. They support plant and wildlife species specially adapted to the seasonal fluctuations such as the Federally threatened vernal pool fairy shrimp (<i>Branchinecta lynchi</i>) and Federally endangered vernal pool tadpole shrimp (<i>Lepidurus packardii</i>). Two types of vernal pools occur in the project area, northern hardpan vernal pools and volcanic mudflow vernal pools.</p> <p>The impermeable layer in northern hardpan vernal pools consists of an iron-silicate cemented hardpan. This type of vernal pool is by far the most common in the project area. Northern hardpan pools are generally associated with iron oxidized soils such as San Joaquin series. Dominant vegetation in northern hardpan vernal pools includes annual hairgrass, coyote thistle, downingia and popcorn flower.</p> <p>The largest concentrations of northern hardpan vernal pools in the project area are located in the extreme southern end between SR 65 and Industrial Boulevard and in the eastern portion of the project area between Nicolaus Road and Wise Road.</p>  |
| Grassland/<br>Northern Volcanic<br>Mudflow Vernal Pool<br>Complex | 4.7 ha<br>11.7 ac              | 0.2 %                 | <p>Northern volcanic mudflow vernal pools are created by cemented volcanic mudflows forming an impermeable layer. They are much less common than northern hardpan vernal pools and are limited to the Exchequer soil series within the project area. Volcanic mudflow pools are typically smaller and shallower than hardpan pools. As a result, they dry up sooner than hardpan pools and the flowering times are usually several weeks earlier. Typical plant species in northern volcanic mudflow vernal pools include yellow carpet, Fremont goldfields, coyote thistle and wooly marbles.</p> <p>Northern volcanic mudflow vernal pools only occur in two locations within the project area. One complex is located northeast of existing SR 65 between Nicolaus Road and Wise Road. A second, smaller complex is located in the southern portion of the project area, between SR 65 and Industrial Boulevard.</p>   |

| Comm-<br>unity | Area in<br>Hectares<br>(acres)              | % of<br>Study<br>Area | Description  |
|----------------|---|-----------------------|--|
| Vernal Marsh   | 10.0 ha<br>24.7 ac                          | 0.5 %                 | Vernal marsh is a community type transitional between vernal pools and valley freshwater marsh. Vernal marsh areas are generally deeper, and stay wet longer, than vernal pools. Consequently, many typical vernal pool plant species do not occur in vernal marshes. Vernal marsh areas typically dry out in the summer; thus, many of the typical freshwater marsh species described previously are precluded. Common species found in vernal marshes include rushes and spike rushes in the deeper areas and vernal buttercup and popcorn flower in the shallows. |
| Open<br>Water  | 11.4 ha<br>28.2 ac                          | 0.6 %                 | Open waters are unvegetated areas of ponds, channels or other aquatic areas that are not included in another natural community. Open water is typically associated with valley freshwater marsh communities in the deeper water where marsh species cannot grow. The largest expanse of open water is located in Markham Ravine south of Nicolaus Road where the drainage has been partially dammed.   |
| Total          | <b>2,004.0 hectares<br/>(4,948.3 acres)</b> |                       |  |



Source: Mapping/GIS - LSA Associates, Inc., 1999  
Base Photo - Andregg, Inc., March 1999

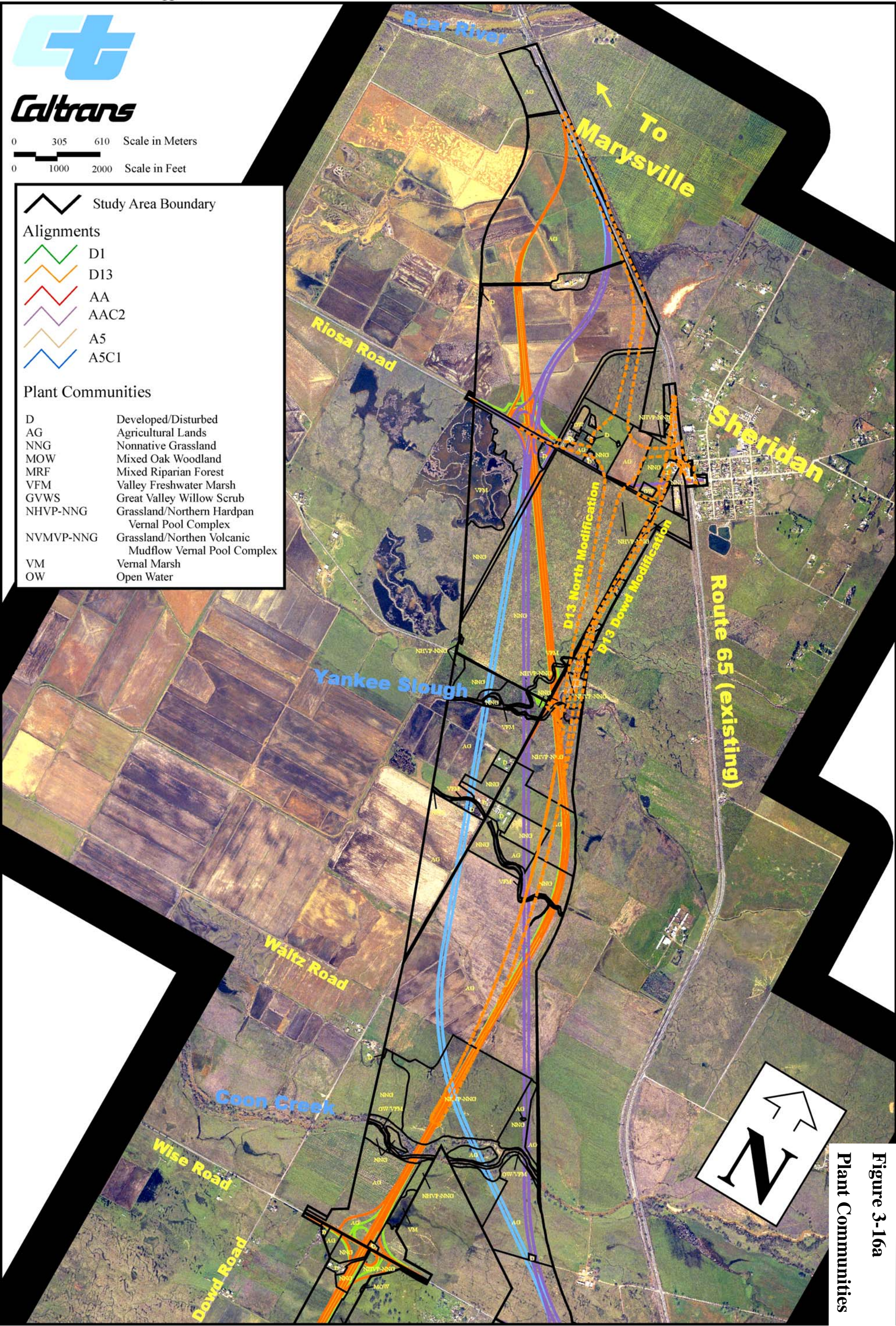
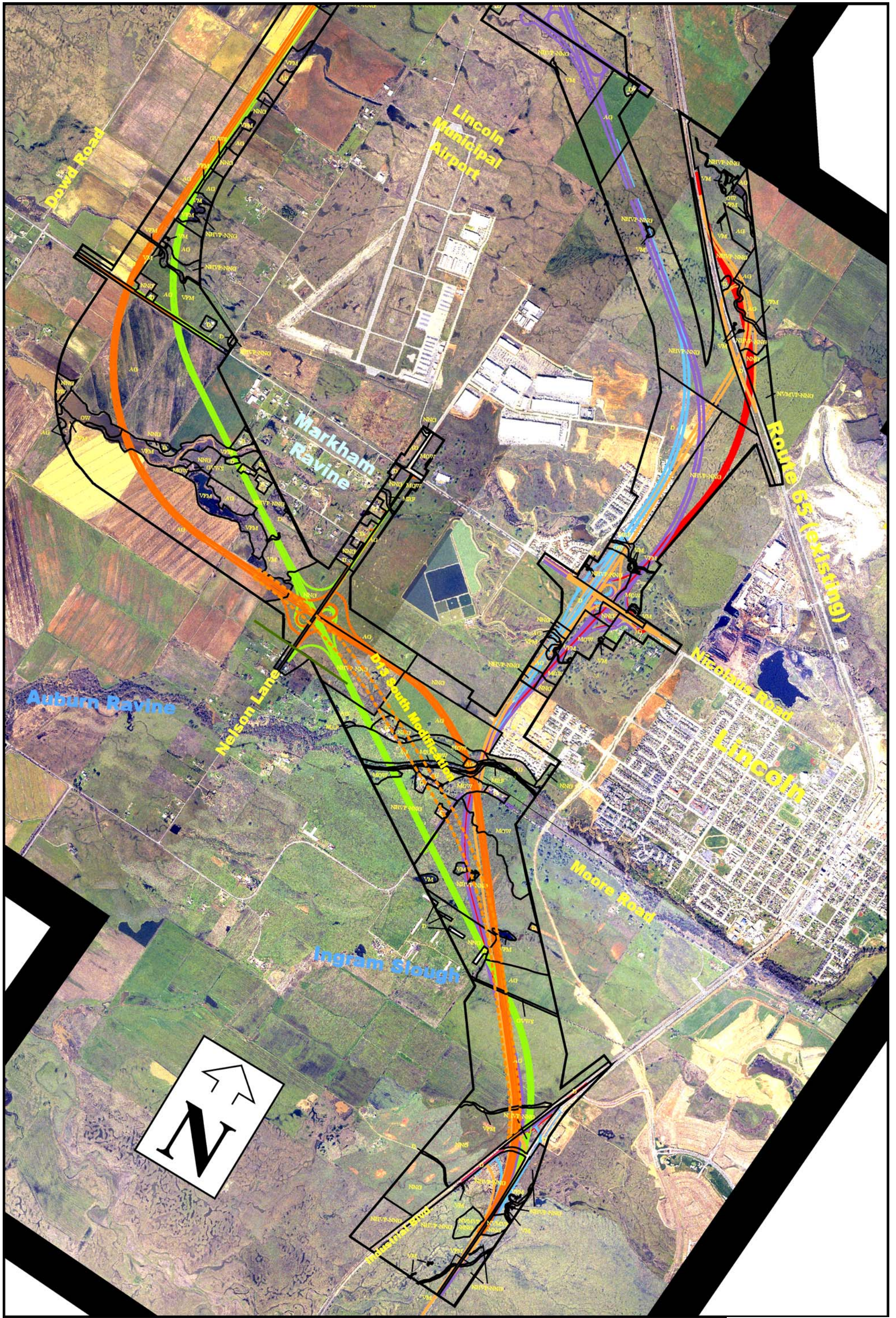


Figure 3-16a  
Plant Communities





0/01 (PCT830)

Source: Mapping/GIS - LSA Associates, Inc., 1999  
Base Photo - Andregg, Inc., March 1999

Figure 3-16b  
Plant Communities



### 3.7.5 Special Status Species

An annotated list of special status species potentially occurring in the project area was generated based on California Natural Diversity Data Base (CNDDDB), California Native Plant Society (CNPS) and FWS lists coordination with agency biologists, review of previous project documents and input from biologists. A 2003 list was obtained for Section 7 purposes dated August 5, 2003. The annotated list is included in Table 3-23.

**Table 3-23 Special Status Species Potentially Occurring in the Project Area**

| Common Name<br><i>Latin Name</i>                                  | Status                 | Potential in Project Area / Results of Previous Studies   | Notes  |
|---|------------------------|---|--|
| <b>Mammals</b>  |                        |   |  |
| River otter<br><i>Lutra canadensis</i>                            | Protected<br>furbearer | River otters have been observed in Markham Ravine, and it is expected that this species periodically occurs in the Study Area.  | This uncommon species occurs along streams and lake borders throughout the Central Valley. Although primarily aquatic, otters will travel several kilometers over land to reach another stream or lake.  |
| Spotted bat<br><i>Euderma maculatum</i>                           | FSC<br>CSC             | Suitable roosting habitat does not occur in the project area. This species is not expected to occur.  | The spotted bat occupies a wide range of habitats, from arid deserts and grasslands to coniferous forest. Spotted bats need cliff crevices or caves for roosting.  |
| Greater western mastiff bat<br><i>Eumops perotis californicus</i> | FSC<br>CSC             | This species was not observed during previous surveys, but could potentially occur in the project area since suitable roost trees are most likely present.                  | This species occurs in a variety of arid to semi-arid habitats including grassland, chaparral and deciduous woodlands, and is known to utilize trees as roost sites.   |
| Small-footed myotis bat<br><i>Myotis ciliolabrum</i>              | FSC                    | Could potentially occur. Buildings in project area may provide roost sites. Not observed during previous surveys.   | This species utilizes buildings as roost sites and could potentially occur in the project area.  |
| Long-eared myotis bat<br><i>Myotis evotis</i>                     | FSC                    | Although not observed during previous surveys, the long-eared myotis bat may utilize buildings for nursery or roost sites and may occur in the project area.                | This species occurs in a wide variety of habitats to 2,743 m (9,000 ft) elevation, but prefers coniferous woodlands and forests.   |
| Fringed myotis bat<br><i>Myotis thysanodes</i>                    | FSC                    | Although not observed during previous surveys, the fringed myotis bat may occur in the project area.  | This species occurs in a wide variety of habitats and may utilize buildings as nursery or roost sites.   |
| Long-legged myotis bat<br><i>Myotis volans</i>                    | FSC                    | This species was not observed during previous surveys. Suitable roost trees are most likely present in the project area; as a result, this species could potentially occur. | It is most common in woodland and forest habitats above 1,219 m (4,000 ft).  |
| Yuma myotis bat<br><i>Myotis yumanensis</i>                       | FSC<br>CSC             | Could potentially occur. Buildings in project area may provide roost sites. Not observed during previous surveys.   | This species occurs in open forests and woodlands, and its distribution is strongly tied to water sources. Although not observed during previous surveys, buildings in the project area may provide roost or nursery sites and this species could potentially occur. |



| Common Name<br><i>Latin Name</i>                                       | Status                              | Potential in Project Area / Results of Previous Studies   | Notes  |
|--|-------------------------------------|---|--|
| Pale Townsend's big-eared bat<br><i>Plecotus townsendii pallescens</i> | FSC<br>CSC                          | Although not observed during previous surveys, the pale big-eared bat could potentially occur in the project area, as existing buildings could be utilized as roost sites.  | This species occurs in a variety of habitats.  |
| Pacific western big-eared bat<br><i>Plecotus townsendii townsendii</i> | FSC<br>CSC                          | Although not observed during previous surveys, Townsend's western big-eared bat may utilize buildings in the project area as roost sites, and consequently could potentially occur.   | This species occurs in a variety of habitats   |
| San Joaquin pocket mouse<br><i>Perognathus inornatus</i>               | FSC                                 | Although not observed during previous surveys, the San Joaquin pocket mouse could potentially occur in the project area.  | This species occurs in grassland and blue oak savanna.   |
| <b>Birds</b>   |                                     |   |  |
| Cooper's hawk<br><i>Accipiter cooperii</i>                             | CSC                                 | Cooper's hawks have been observed foraging in the project area. No nests were identified during previous surveys; however, nesting habitat does occur on the project site.  | This species occurs in woodlands and generally nests in riparian communities.  |
| Sharp-shinned hawk<br><i>Accipiter striatus</i>                        | CSC                                 | Sharp-shinned hawks have been observed foraging in the project area. Nesting habitat is present in the project area, but no nests have been identified.   | This species breeds in coniferous and riparian deciduous forests, and prefers riparian areas.  |
| Swainson's Hawk<br><i>Buteo swainsoni</i>                              | ST                                  | At least eight Swainson's Hawks were observed in and around the project area during a two-day survey in May 1999. At least three of the eight hawks were observed within the Study Area. The other observations were outside of the project area, but within an approximate 16.1 km (10 mi) radius of the project area. | This species requires fields or grasslands for foraging and breeds in stands with few trees in juniper-sage flats, riparian areas and oak savanna.<br>Swainson's Hawk nesting habitat in, and in the vicinity of, the project area consists of the taller trees in the Coon Creek, Auburn Ravine and Pleasant Grove Creek riparian corridors. The grasslands and fallow agricultural lands that are not planted in rice or orchards provide suitable foraging habitat. |
| American peregrine falcon<br><i>Falco peregrinus anatum</i>            | SE;<br>State Fully Protected, MNBMC | Although some potential foraging habitat occurs in the project area, no nesting habitat is present. This species is not expected to occur in the project area.  | This species nests on high cliffs or human-made structures and generally forages near water.   |
| Prairie falcon<br><i>Falco mexicanus</i>                               | CSC                                 | Prairie falcons have been observed in the project area. No nesting habitat present.   | This species forages in dry, open country and nests on cliffs. Foraging habitat for prairie falcon occurs in the project area but no nesting habitat is present.   |
| Bald eagle<br><i>Haliaeetus leucocephalus</i>                          | FT<br>SE<br>State Fully Protected   | Some potential foraging habitat is present but no bald eagle nesting habitat occurs in the project area, and this species is not expected to occur.   | This species occurs near ocean shorelines, lake margins and rivers where it forages. Bald eagles nest in tall trees or on cliffs near large bodies of water.   |

| Common Name<br><i>Latin Name</i>                              | Status  | Potential in Project Area / Results of Previous Studies  | Notes   |
|---|---|--|---|
| Tricolored blackbird<br><i>Agelaius tricolor</i>              | FSC<br>CSC<br>MNBMC                                   | Suitable nesting habitat (i.e., freshwater marsh) occurs in the project area. Tricolored blackbirds have been observed in the project area but no nesting colonies have been identified. | This species nests colonially, usually in cattail and tule marshes, but is also known to nest in thistle and blackberry patches and other dense vegetation.   |
| Golden eagle<br><i>Aquila chrysaetos</i>                      | Federally Protected;<br>CSC,<br>State Fully Protected | Although no nesting habitat is present, golden eagles have been observed foraging in the project area.   | This species forages in open country and nests in trees or on cliffs.   |
| Northern harrier<br><i>Circus cyaneus</i>                     | CSC   | Northern harriers have been observed foraging in the project area, and one nest was identified.  | Suitable habitat for this species includes coastal salt marsh, fresh-water marsh and open grassland, where it both forages and nests.   |
| White-tailed kite<br><i>Elanus caeruleus</i>                  | State Fully Protected,<br>MNBMC                       | White-tailed kites have been observed foraging in the project area, and one nest was identified.   | This species occurs in open groves, river valleys, marshes and grasslands.  |
| Double-crested cormorant<br><i>Phalacrocorax auritus</i>      | CSC   | This species was observed in the project area near Markham Ravine. Nesting habitat occurs in the project area, but no nesting colony has been identified.                                | This species nests colonially on coastal cliffs and offshore islands, and along lake margins in the interior of the state.  |
| Aleutian Canada goose<br><i>Branta canadensis leucopareia</i> | FT  | Wintering (foraging) habitat is present in the project area for Aleutian Canada goose, and this species could occur  | This species breeds in the Aleutian Islands and winters in lower latitudes including areas of the U.S. This species generally winters on or near lakes or other bodies of fresh water, often foraging in pastures or fields.  |
| Mountain plover<br><i>Charadrius montanus</i>                 | FTP<br>CSC<br>MNBMC                                   | This species could potentially forage in the project area during the winter.   | The mountain plover breeds in short-grass prairie in the mid-western U.S. and winters in semi-arid and arid grasslands and agricultural areas in the southwestern U.S. and Mexico.  |
| Western burrowing owl<br><i>Athene cunicularia hypugea</i>    | FSC<br>CSC<br>MNBMC                                   | Although not observed in the Study Area, suitable habitat for the burrowing owl is present, and this species could potentially occur.  | The burrowing owl inhabits open, dry grasslands, deserts and scrublands with low-growing vegetation and is commonly observed in agricultural areas. The burrowing owl nests below ground, utilizing abandoned burrows of other species, especially ground squirrels.                                    |
| Ferruginous hawk<br><i>Buteo regalis</i>                      | FSC<br>CSC<br>MNBMC                                   | Ferruginous hawks could potentially forage in the project area during the winter.  | This species breeds in the Great Plains region from the mid-western U.S. to southern Canada. Ferruginous hawks winter in open grasslands, sagebrush flats, desert scrub and other open country in the southwestern portion of their breeding range and extending into the southwestern U.S. and Mexico. |
| White-faced ibis<br><i>Plegadis chihi</i>                     | FSC<br>CSC<br>MNBMC                                   | Although not observed during surveys, the white-faced ibis could utilize marsh habitat within the project area for breeding and/or foraging.   | This species occurs in freshwater marsh habitats.   |

| Common Name<br>Latin Name                                     | Status                        | Potential in Project Area / Results of Previous Studies   | Notes  |
|---|-------------------------------|---|--|
| California horned lark<br><i>Eremophila alpestris actia</i>   | CSC                           | Observed on the project site during previous surveys. Suitable nesting habitat present; no nesting observed.  | This species nests in grassland.   |
| Grasshopper sparrow<br><i>Ammodramus savannarum</i>           | FSC<br>MNBMC                  | Grasshopper sparrows have been observed in the project area but no nests were identified.   | They occur in dense grasslands, lowland plains, and in valleys and on hillsides on lower mountain slopes. The project area could support breeding populations of this species.   |
| Lark sparrow<br><i>Chondestes grammacus</i>                   | FSC                           | Although not observed during surveys, suitable habitat for the lark sparrow is present in the project area and this species could occur.  | The lark sparrow occurs in pastures, farmlands and roadsides.  |
| American bittern<br><i>Botaurus lentiginosus</i>              | FSC,<br>MNBMC                 | This species has been observed in the project area but no nesting was observed.   | They occur in freshwater and slightly brackish marsh habitat, as well as coastal saltwater marsh. Suitable nesting habitat for the American bittern occurs in the project area.  |
| <b>Amphibians</b>   |                               |   |  |
| Foothill yellow-legged frog<br><i>Rana boylei</i>             | FSC<br>CSC<br>State Protected | The foothill yellow-legged frog is thought to be extinct in the Sacramento Valley and is not expected to occur in the project area.   | This species occurs in shallow, partly-shaded streams and riffles with rocky substrates. This frog prefers substrates that are at least cobble-sized and requires open areas where it can bask on rocks.                                   |
| Mountain yellow-legged frog<br><i>Rana muscosa</i>            | FSC<br>CSC<br>State Protected | No suitable habitat is present in the project area, and this species is not expected to occur.  | This species occurs in montane habitats, often in riparian areas.  |
| California red-legged frog<br><i>Rana aurora draytonii</i>    | FT<br>CSC<br>State Protected  | This species has not been observed in the Study Area and there are no records for the project vicinity. Although suitable habitat for the California red-legged frog is present in the project area, due to the presence of large numbers of non-native predators (i.e., bullfrog, crayfish, largemouth bass, etc.), this species is not expected to occur. | The red-legged frog inhabits lowlands and foothills in or near permanent sources of deep water. The frog prefers ponds or creeks with extensive shoreline vegetation but will disperse 1.6 km (1 mi) or more during and after rain events. |
| Western spadefoot toad<br><i>Scaphiopus hammondi</i>          | FSC<br>CSC<br>State Protected | Suitable habitat for the western spadefoot occurs in the project area, and this species could potentially occur.  | Spadefoots occupy a variety of lowland habitats including washes, alluvial fans and river floodplains. Areas of sandy soil and open vegetation are preferred.  |
| California tiger salamander<br><i>Ambystoma californiense</i> | FC<br>CSC<br>State Protected  | Suitable habitat for California Tiger Salamander is present in the project area, but the project area is well north of its known range. Consequently, this species is not expected to occur.  | This species occurs near water sources in grasslands and open woodland habitats.   |

| Common Name<br>Latin Name  | Status                                       | Potential in Project Area / Results of Previous Studies  | Notes  |
|--|--|--|--|
| <b>Reptiles</b>  |  |  |  |
| Northwestern pond turtle<br><i>Clemmys marmorata marmorata</i>   | FSC<br>CSC<br>State Protected (full species) | Northwestern pond turtles have been observed in the project area.  | This species occurs in permanent or nearly permanent bodies of water in a variety of habitats.   |
| California horned lizard<br><i>Phrynosoma coronatum frontale</i> | FSC<br>CSC<br>State Protected                | Although not observed during previous surveys, this species occurs in a wide variety of habitats and could potentially occur in the project area.  | A variety of habitats.   |
| Giant garter snake<br><i>Thamnophis gigas</i>                    | FT<br>ST<br>State protected                  | Suitable giant garter snake habitat is present in the project area, but the project is well east of its known distribution. The giant garter snake is not expected to occur in the project area.   | It occurs in freshwater marsh and low gradient streams and has adapted to similar habitat provided by drainage canals and irrigation ditches.                              |
| <b>Fish</b>  |  |  |  |
| Chinook salmon<br><i>Oncorhynchus tshawytscha</i>                |  | The chinook salmon ( <i>Oncorhynchus tshawytscha</i> ) is an anadromous species that spends part of its life in freshwater and part in salt water. These species spawn in small, freshwater streams where the young remain for a time before migrating to the ocean. Adults return to their natal streams to spawn and complete their life cycle.<br><br>Chinook salmon require clean gravel beds in which to spawn. The reaches of the drainages that flow through the project area do not contain suitable spawning habitat for chinook salmon. However, upstream reaches of Auburn Ravine and Coon Creek do contain potential spawning habitat. In addition, drainages and tributaries within the project area could provide non-natal rearing habitat for salmon fry in early stages of development. |  |
| Winter-run chinook salmon  | FE<br>SE                                     | Winter-run salmon have not been observed in the project area, and are not expected to occur.   |  |
| Central Valley spring-run chinook salmon                         | FT   | Spring run salmon have not been observed in the project area, and are not expected to occur.   |  |
| Central Valley fall-run chinook salmon                           | FC   | Fall-run chinook salmon have been observed in low numbers in Auburn Ravine, Coon Creek and Ingram Slough.  |  |
| Delta smelt<br><i>Hypomesus transpacificus</i>                   | FT<br>ST                                     | No suitable habitat for this species occurs in the project area and it is not expected to occur.   | It occurs in sloughs and backwater areas of the Sacramento-San Joaquin Delta.  |
| Central Valley steelhead<br><i>Oncorhynchus mykiss</i>           | FT   | The Central Valley steelhead could potentially spawn in upstream reaches of Auburn Ravine or Coon Creek, and consequently could occur in the project area.   | Like the chinook salmon, this species is anadromous and migrates from the ocean to its spawning grounds. Its spawning habitat requirements are similar to those of salmon. |
| Sacramento splittail<br><i>Pogonichthys macrolepidotus</i>       | FT<br>CSC                                    | Sacramento splittail has not been observed in the Study Area and is not expected to occur due to absence of suitable habitat.  | This species occurs in slow-moving sections of large river systems.  |
| Green sturgeon<br><i>Acipenser medirostris</i>                   | FSC<br>CSC                                   | It has not been observed in the Study Area and is not expected to occur.   | This species is only known to spawn in the Sacramento and Klamath Rivers.  |

| Common Name<br>Latin Name   | Status              | Potential in Project Area / Results of Previous Studies  | Notes   |
|---|---------------------|--|---|
| Longfin smelt<br><i>Spirinchus thaleichthys</i>                               | FSC<br>CSC          | This species has not been observed in the Study Area and is not expected to occur.   | Longfin smelt occur in sloughs and backwater areas of the Sacramento-San Joaquin Delta.   |
| River lamprey<br><i>Lampetra ayresi</i>                                       | FSC<br>CSC          | The river lamprey has not been observed in the Study Area but could potentially occur.   | This species occurs in the lower Sacramento River, San Joaquin River, and Russian River, and in coastal streams north of the San Francisco Bay.   |
| Pacific lamprey<br><i>Lampetra tridentata</i>                                 | FSC                 | This species has been identified in the Study Area.  | The Pacific lamprey is known from most coastal streams from Alaska south to southern California.  |
| <b>Invertebrates</b>  |                     |  |   |
| Vernal pool fairy shrimp<br><i>Branchinecta lynchi</i>                        | FT                  | Vernal pool fairy shrimp have been identified in vernal pools throughout the project area.   | This species inhabits vernal pools in grasslands in the Central Valley and central and southern coast mountains.  |
| Vernal pool tadpole shrimp<br><i>Lepidurus packard</i>                        | FE                  | Although not previously recorded in the Study Area, vernal pool tadpole shrimp are known to occur at the west edge of the project and could potentially occur in the project area.                                       | This species inhabits vernal pools and swales in the Sacramento Valley.   |
| Valley elderberry longhorn beetle<br><i>Desmocerus californicus dimorphus</i> | FT                  | Elderberry plants occur in the Study Area, and Valley elderberry longhorn beetle could potentially be present.   | This species occurs only in the Central Valley in close association with blue elderberry ( <i>Sambucus mexicana</i> ). The larvae of the beetle feed and mature within the stems of elderberry plants with a diameter of one inch or greater. |
| <b>Plants</b>   |                     |  |   |
| Slender Orcutt grass<br><i>Orcuttia tenuis</i>                                | FT<br>SE<br>CNPS 1B | Slender Orcutt grass was not recorded during previous focused surveys or during 1999 sampling. There are no known records from the project vicinity.   | This species occurs in vernal pools from Sacramento County in the south to Siskiyou County.   |
| Sacramento Orcutt grass<br><i>Orcuttia viscida</i>                            | FE<br>Se<br>CNPS 1B | Could potentially occur. Associated with Bogg's Lake hedge-hyssop, which was identified on the project site. Not identified during previous surveys.   | This species is only known from vernal pools in Sacramento County.  |
| Ahart's dwarf rush<br><i>Juncus leiospermus</i> var. <i>ahartii</i>           | FSC<br>CNPS 1B      | This species was observed in ungrazed pools in the "A" alignments northwest of Lincoln during previous surveys. Ahart's dwarf rush could potentially occur elsewhere in the Study Area.                                  | Ahart's dwarf rush occurs in vernal pools.  |
| Hispid bird's-beak<br><i>Cordylanthus mollis</i> ssp. <i>hispidus</i>         | FSC<br>CNPS 1B      | The closest known occurrence of this species is approximately 6.4 km (4 mi) southeast of the project area. Hispid bird's beak was not observed in the project area during previous surveys, but could potentially occur. | This species occurs in damp, alkaline soils in meadows, playas, and valley and foothill grasslands.   |
| Red Bluff dwarf rush<br><i>Juncus leiospermus</i> var. <i>leiospermus</i>     | CNPS 1B             | This species was not recorded in the Study Area during previous focused surveys.   | This species occurs in margins of vernal pools and in wet places in chaparral and woodland communities.   |

| Common Name<br><i>Latin Name</i>   | Status   | Potential in Project Area / Results of Previous Studies  | Notes   |
|--|--|--|---|
| Bogg's Lake hedge-hyssop<br><i>Gratiola heterosepala</i>                       | SE<br>CNPS 1B                                    | Bogg's Lake hedge-hyssop was observed in one vernal pool east of the "A" alignments and could occur elsewhere within the Study Area. | This species occurs in vernal pools and freshwater marshes and swamps.                      |
| Dwarf downingia<br><i>Downingia pusilla</i>                                    | CNPS 2   | Dwarf downingia was observed in the deeper vernal pools throughout the Study Area.   | This species occurs in vernal pools and roadside ditches in valley and foothill grasslands. |
| Big-scale balsam root<br><i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i> | CNPS 1B  | Could potentially occur. Not identified during previous surveys.   | This species occurs in valley and foothill grassland habitat.                               |
| Legenere<br><i>Legenere limosa</i>   | FSC<br>CNPS 1B                                   | Legenere was not recorded in the Study Area during previous focused surveys but has been recorded in the general vicinity.           | This species occurs in wet areas and vernal pools.  |
| Valley oak<br><i>Quercus lobata</i>  | Protected by Senate Concurrent Resolution No. 17 |  | Riparian areas and isolated stands.   |

**Federal**

FE - Endangered

FT - Threatened

FPE - Proposed Endangered

FPT - Proposed Threatened

FC - Candidate

FSC - Species of Concern

MNBMC - Migratory Nongame Birds of Management Concern

**State**

SE – Endangered

ST – Threatened

CSC - Species of Concern

**California Native Plant Society**

CNPS 1B – Rare or Endangered in California and elsewhere

CNPS 2 - Rare or Endangered in California, more common elsewhere

**Endangered (state and federal):** A species that is in danger of extinction throughout all or a significant portion of its range.

**Threatened (state and federal):** A species that that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

**Proposed Threatened or Endangered (federal):** Any species that is proposed in the Federal Register to be listed under Section 4 of the Endangered Species Act.

**Candidate (federal):** Species for which the FWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposal for listing, but issuance of a proposed rule is currently precluded by higher priority listing actions.

**Species of Concern (federal):** A species that was a former federal Category 2 Candidate for listing, which is a species for that the FWS has concerns about, but has insufficient information on file on vulnerability and threats to support issuance of a proposal for listing.

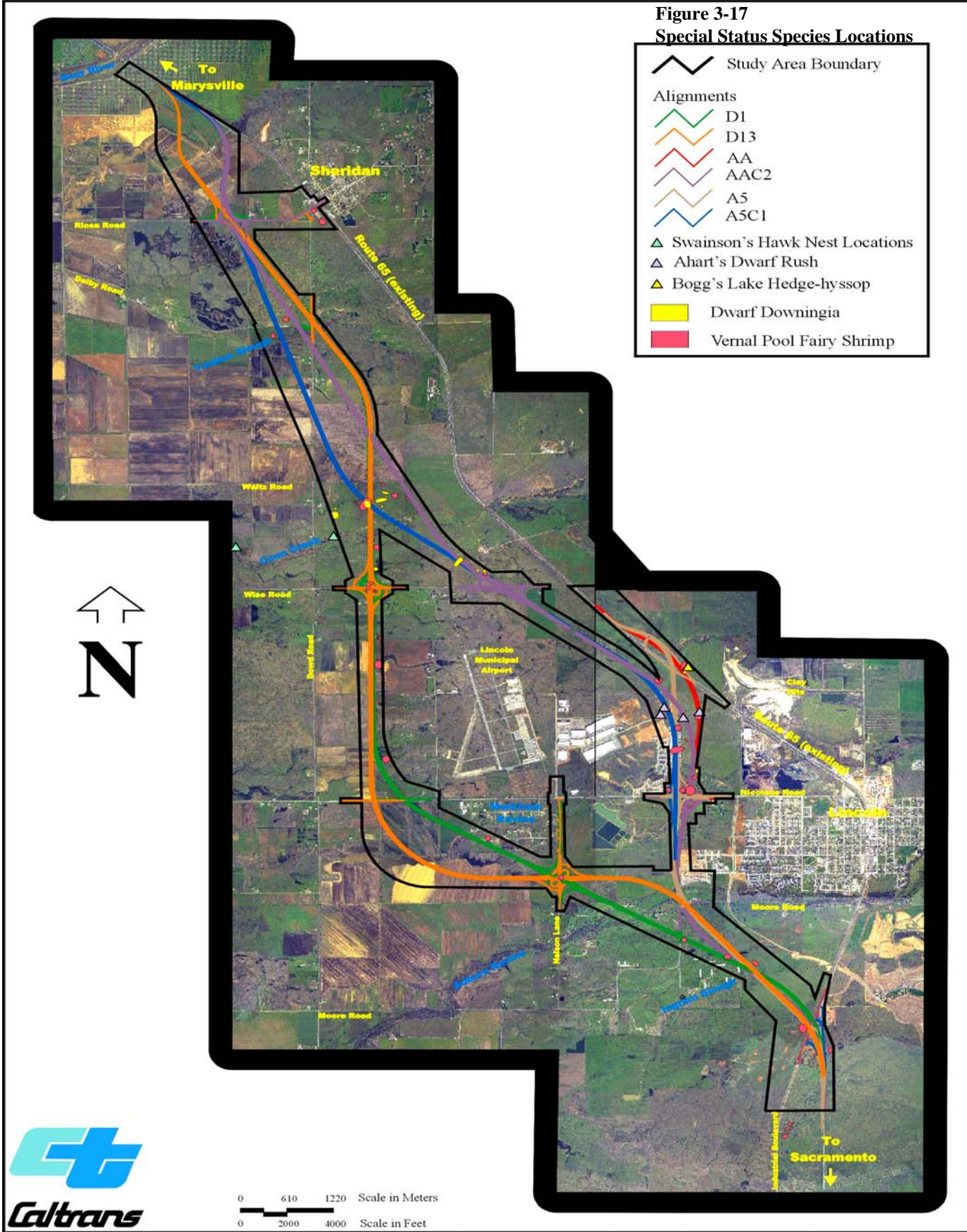
**Species of Concern (state):** California species of special concern are those that the California Department of Fish and Game is concerned about because of declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction.

**Migratory Nongame Birds of Management Concern:** Species of migratory nongame birds that are considered to be of concern in the United States because of: 1) documented or apparent population declines; 2) small or restricted populations, or; 3) dependence on restricted or vulnerable habitats.

**CNPS List 1B:** Plants that the California Native Plant Society (CNPS) considers to be rare, threatened or endangered in California and elsewhere.

**CNPS List 2:** Plants that the CNPS considers to be rare, threatened or endangered in California, but are more common elsewhere.

**Figure 3-17**  
**Special Status Species Locations**



10/20/99(PCT830)



Figure 3-17 shows locations where special status species have been recorded in the Study Area. Letters documenting coordination with the U.S. Fish and Wildlife Service are located in Chapter 7.

This section provides an overview of the special status species that are known to occur, or may potentially occur, within the Study Area. Additional detailed information on State and Federal listed species potentially affected by this project is included in the Natural Environment Study, available by request. The streams present within the project site will likely be considered Critical Habitat for the Central Valley steelhead. Because the fall/late fall-run chinook salmon is a candidate for listing as threatened or endangered, Critical Habitat, and Essential Fish Habitat, could be designated for this ESU if it is listed prior to implementation of the project.

### 3.7.6 Wetlands/Jurisdictional Waters Assessment

Wetlands and waters of the U.S. (streams and lakes) that are subject to California Department of Fish and Game and/or U.S. Army Corps of Engineers jurisdiction present in the project study area are summarized in Table 3-24.

#### California Department of Fish and Game (CDFG)

CDFG, through provisions of Sections 1602 of the California Administrative Code, is empowered to issue agreements for any alteration of a river, stream or lake where fish or wildlife resources may be adversely affected. The presence of a channel bed and banks, and at least an intermittent flow of water define streams (and rivers). The agreement generally includes, within the jurisdictional limits of streams and lakes, any riparian habitat present. In most situations, wetlands associated with a stream or lake would fall within the limits of riparian habitat.

For purposes of this evaluation, CDFG waters include mixed riparian forest habitat associated with Auburn Ravine and Coon Creek, willow scrub and marsh habitat (most of which is associated with drainages or ponds) and other waters (primarily ponds). Vernal pools and swales are not included, as these features are not regulated by CDFG.

The project will result in the alteration of lakes and streambeds subject to CDFG regulation. Consequently, a Section 1602 Streambed Alteration Agreement will be required. Notification to CDFG is generally made after the environmental process is complete and final plans are being prepared.

**Table 3-24 Jurisdictional Waters Occurring in the Study Area**

| <b>Jurisdictional Waters</b> | <b>Area (<i>acres in italics</i>)</b> | <b>Percentage of total wetlands</b> |
|------------------------------|---------------------------------------|-------------------------------------|
| <b>USACE – Wetlands</b>      |                                       |                                     |
| Willow scrub                 | 1.9 ha (4.7 ac)                       | 1.76%                               |
| Freshwater marsh             | 61.47 ha (151.9 ac)                   | 57.02%                              |

| <b>Jurisdictional Waters</b>                         | <b>Area (<i>acres in italics</i>)</b> | <b>Percentage of total wetlands</b> |
|--|---------------------------------------|-------------------------------------|
| Vernal marsh   | 10.32 ha (25.5 ac)                    | 9.57%                               |
| Vernal pool  | 31.24 ha (77.2 ac)                    | 28.98%                              |
| Vernal swale   | 2.87 ha (7.1 ac)                      | 2.67%                               |
| <b>Total - USACE Wetlands</b>                        |                                       | 107.81 ha (266.4 ac)                |
| <b>USACE – Non-wetlands (Open water)</b>             |                                       | 11.33 ha (28.0 ac)                  |
| <b>Total - USACE Wetlands and Waters of the U.S.</b> |                                       | 119.14 ha (294.4 ac)                |
| <b>CDFG Jurisdictional Waters (Estimated)</b>        |                                       | 92.55 ha (228.7 ac)                 |

*Revised Alternatives Analysis 9/24/02*

### **U.S. Army Corps of Engineers (USACE)**

Creeks, marshes, vernal pools and other waters within the Study Area are subject to USACE permitting authority under Section 404 of the Clean Water Act. A Section 404 permit from the USACE is required for discharges of dredged or fill material into vernal pools and swales, creeks, marshes and other regulated waters of the U.S. These discharges will occur as a result of roadbed construction, bridge and culvert construction and other similar activities. Based on preliminary impact determinations, an individual 404 permit will likely be required. Riparian communities may not fall under USACE jurisdiction unless they are below the ordinary high water mark (OHWM) or classified as wetlands.

Both NEPA and Section 404 of the Clean Water Act require a thorough evaluation of project alternatives as part of the review process. NEPA regulations require that an EIS “rigorously explore and objectively evaluate all reasonable alternatives.” EPA regulations, which apply to USACE permitting authority under Section 404, stipulate that only the least environmentally damaging practicable alternative (LEDPA) may be permitted. The NEPA/404 Integration MOU was adopted in 1993 in order to improve interagency coordination and integrate the NEPA and Section 404 procedures. Section 404(b)(1) requires an Alternatives Analysis in order to document the evaluation and identification of the LEDPA.

The project is subject to the NEPA/404 Integration Memorandum of Agreement (MOU); consequently, coordination with the USACE regarding permitting requirements has been ongoing for some time. Documentation of the NEPA/404 coordination can be found in Chapter 7. An Alternatives Analysis, pursuant to Section 404(b)(1) requirements, also has been prepared and is available for review at the Caltrans’ District 3 Sacramento office, 2389 Gateway Oaks Dr. Sacramento, CA.

Through the NEPA/404 process, the LEDPA was identified (D13 North Modified). Concurrence was received on the Draft Mitigation and Monitoring Plan in December 2004 for

the project and a final concurrence from the USACE will be pursued after final design has been completed. Letters are included in Appendix E, NEPA/404 Communication.

### **California Regional Water Quality Control Board**

As part of the 404 permitting process, a Section 401 Certification from the Regional Water Quality Control Board is required. Application to the Regional Board is generally made after the environmental document is complete. A 401 Certification will be required before the 404 permit is issued.

### **Federal Wetland Delineation**

The wetland delineation consists of a review and updating of the previous wetland delineation that was completed in 1994. The most recent wetland delineation was submitted to USACE in March 2004, and has not yet been verified. The delineation is preliminary and intended to support the evaluation of project alternatives. A wetland delineation has been prepared and submitted to the regulatory agencies and is awaiting approval. In order to be considered a jurisdictional wetland by the USACE and therefore subject to regulatory authority under Section 404 of the Clean Water Act, an area must possess three wetland characteristics: hydrophytic vegetation, wetland hydrology and hydric soils. Wetland vegetation, hydrology and soils each have specific criteria that must be satisfied in order for that particular wetland characteristic to be met. There are, however, exceptions to requirement of satisfying all three parameters, especially for atypical wetlands and “problem wetlands.”

### **Wetland Value Assessment**

Wetlands and other waters in the Study Area provide a variety of functions and values typical of these aquatic ecosystems. The objective of the wetland value assessment is to provide a useful means for comparing project alternatives based on the relative quality of wetland resources present.

There are two primary wetland types in the Study Area: vernal pool/swale complexes and freshwater marsh. Separate evaluation factors were developed for each type. The acreage of other wetland types such as willow scrub and vernal marsh is relatively limited; consequently, a value assessment of these types was not performed. Locations of the wetlands evaluated are shown in Figure 3-18.



Source: Mapping/GIS - LSA Associates, Inc., 1999  
Base Photo - Andregg, Inc., March 1999

Wetlands and Other Regulated Waters

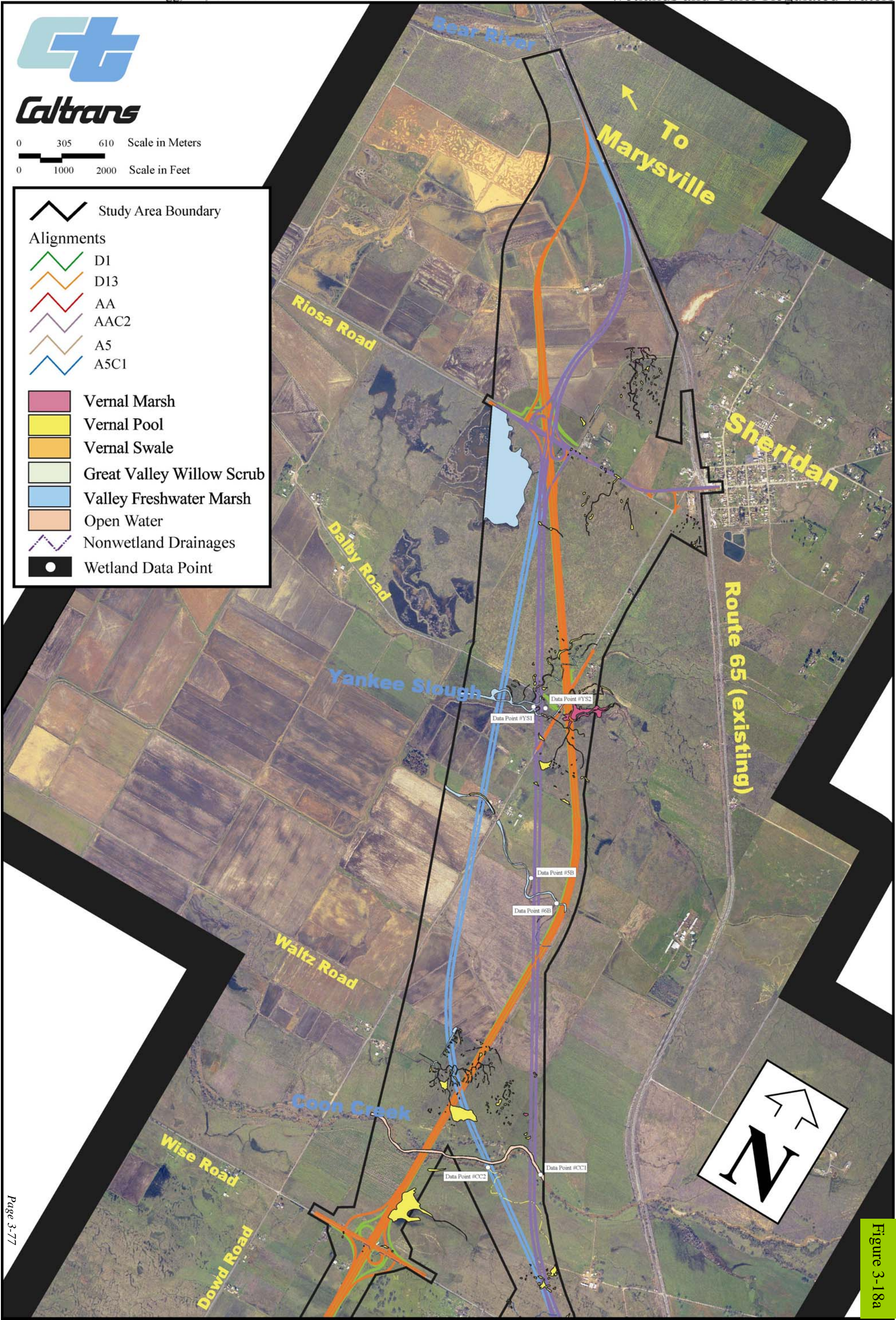


Figure 3-18a



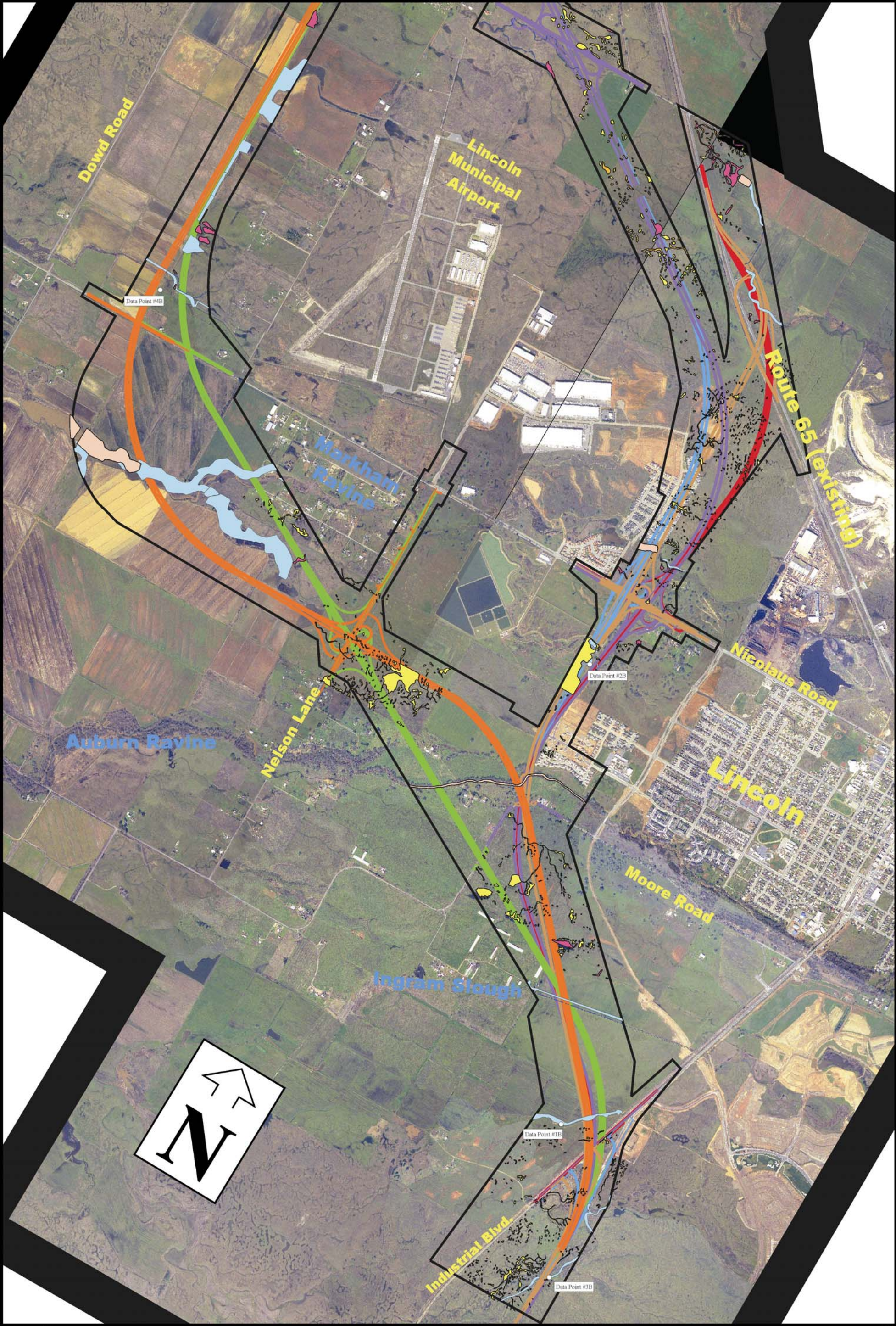


Figure 3-18b Wetlands and Other regulated waters

8/20/01 (PCT830)

Source: Mapping/GIS - LSA Associates, Inc., 1999  
Base Photo - Andregg, Inc., March 1999

Wetlands and Other Regulated Waters



### Vernal Pool/Swale Complexes

These wetlands are characterized by a seasonal cycle of flooding and saturation during the winter and early spring and desiccation during the summer and fall. Most vernal pool wetlands support specialized plant and invertebrate communities adapted to this hydrologic regime. Vernal pools often occur in complexes consisting of a number of pools interconnected by swales. The wetland value assessment for the vernal pool complexes depicted in Figure 3-18 is presented in Table 3-25.

**Evaluation Factors:** Factors considered most important for vernal wetlands, generally based on the criteria developed by U.S. Fish and Wildlife Service (FWS), include the following:

Size of vernal pool complex - larger complexes are more likely to exhibit a greater diversity of soils, vernal pool types, plant species, etc. and are more resistant to disturbances. Larger complexes are generally considered to have greater value than small complexes.

Vernal pool density - vernal pool complexes with more wetland acreage (i.e., higher pool density) are considered to have greater value.

Vernal pool type - less common vernal pool types (i.e., volcanic mudflow vernal pool complexes) are considered to have greater value.

Occurrence of special status species - vernal pools supporting State or Federally listed or proposed species, or species with some other special status, are considered to have greater value.

Condition of wetlands - the general condition of the site and level of degradation. Vernal pool complexes in good condition are considered to have higher value.

**Table 3-25 Wetland Value Assessment for Vernal Pool Complexes**

| Table 6.16-7. Final Value Assessment for Vernal Pool Complexes |                         |                           |                                     |                                       |  |   |           |   |
|--|-------------------------|---------------------------|-------------------------------------|---------------------------------------|--|---|-----------|---|
| Complex #  | Location                | Pool Density <sup>1</sup> | Complex Size <sup>2</sup>           | Vernal Pool Type                      | Special Status Species                   |   | Condition | Comments  |
|  |                         |                           |                                     |                                       | Observed in Complex                      | Potentially Occurring   |           |   |
| All Alignments (A5C1, AAC2, D1, D13)                           |                         |                           |                                     |                                       |  |   |           |   |
| 1  | South end of Study Area | 2.2 %                     | 120-400 ha<br><i>300-1000 acres</i> | Northern hardpan and volcanic mudflow | vernal pool fairy shrimp, CA linderiella | vernal pool tadpole shrimp, dwarf downingia, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, legenera | Good      | Large, diverse, relatively undisturbed complex; includes some tracts of high quality and density pools (outside of Study Area); all alignments cross the east edge of complex, which is moderately disturbed (fair condition) |

| Complex #                            | Location  | Pool Density <sup>1</sup> | Complex Size <sup>2</sup>  | Vernal Pool Type                      | Special Status Species  |   | Condition | Comments  |
|--------------------------------------|---|---------------------------|----------------------------|---------------------------------------|---|---|-----------|---|
|                                      |   |                           |                            |                                       | Observed in Complex   | Potentially Occurring   |           |   |
| 2                                    | North of Ingram Slough, adjacent to Moore Road          | 3.3 %                     | 40-120 ha<br>100-300 acres | Northern hardpan                      | vernal pool fairy shrimp, CA linderiella  | vernal pool tadpole shrimp, dwarf downingia, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, legenere | Fair      | Smaller complex surrounded by development and disturbance; has some very large pools; all alignments bisect this complex.   |
| 7                                    | North of Coon Creek                                     | 7.0 %                     | 40-120 ha<br>100-300 acres | Northern hardpan                      | vernal pool fairy shrimp, CA linderiella, dwarf downingia   | vernal pool tadpole shrimp, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, legenere                  | Fair      | Smaller complex with high density of pools; generally surrounded by agricultural land; all alignments bisect this complex.  |
| 8                                    | Yankee Slough area                                      | 1.7 %                     | > 400 ha<br>1000 acres     | Northern hardpan                      | vernal pool fairy shrimp, CA linderiella  | vernal pool tadpole shrimp, dwarf downingia, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, legenere | Fair      | Very large complex, extending well east of Study Area; includes scattered development and agricultural uses; some tracts of high quality pools remain; all alignments cross west edge of complex. |
| <b>Eastern Corridor (A5C1, AAC2)</b> |   |                           |                            |                                       |   |   |           |   |
| 5                                    | West of clay pits and Sierra Pacific, adjacent to SR 65 | 2.9 %                     | 40-120 ha<br>100-300 acres | Northern hardpan and Volcanic mudflow | vernal pool fairy shrimp, CA linderiella, dwarf downingia, Ahart's dwarf rush, Bogg's Lake hedge-hyssop | vernal pool tadpole shrimp, legenere  | Good      | Diverse complex; includes some areas of high quality pools; complex is crossed by existing Rt. 65 and residential development is encroaching on the west; eastern alignments bisect this complex  |
| 6                                    | Airport area  | 3.9 %                     | > 400 ha<br>1000 acres     | Northern hardpan                      | vernal pool fairy shrimp, CA linderiella, dwarf downingia   | vernal pool tadpole shrimp, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, legenere                  | Fair      | Large, diverse complex; although affected by extensive development, including airport, some large tracts of high quality pools remain; eastern alignments bisect east edge of this complex        |
| <b>Western Corridor (D1, D13)</b>    |   |                           |                            |                                       |   |   |           |   |
| 3                                    | North of Auburn Ravine, adjacent Nelson Lane            | 17.2 %                    | < 40 ha<br>100 acres       | Northern hardpan                      | vernal pool fairy shrimp, CA linderiella  | vernal pool tadpole shrimp, dwarf downingia, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, legenere | Good      | Small, isolated complex with very high pool density; relatively undisturbed; complex bisected by both western alignments  |



| Complex # | Location            | Pool Density <sup>1</sup> | Complex Size <sup>2</sup> | Vernal Pool Type | Special Status Species                   |   | Condition | Comments  |
|-----------|---------------------|---------------------------|---------------------------|------------------|--|---|-----------|---|
|           |                     |                           |                           |                  | Observed in Complex                      | Potentially Occurring   |           |   |
| 4         | Markham Ravine area | 7.0 %                     | < 40 ha<br>100 acres      | Northern hardpan | vernal pool fairy shrimp, CA linderiella | vernal pool tadpole shrimp, dwarf downingia, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, legenera | Poor      | Small complex includes several residences and is generally degraded; D1 alignment crosses western portion of this complex |

<sup>1</sup> Density of overall complex estimated based on density within Study Area.

<sup>2</sup> Total complex size, including portions extending outside of Study Area.

### Analysis

The eight vernal pool complexes vary widely in the attributes considered in this evaluation. Complex size ranges from about 50 acres (Complex 4) to over 2,000 acres (Complex 8). Vernal pool density ranges from 1.7 % (Complex 8) to 17.2 % (Complex 3), average density is 5.7 %. Complex condition ranges from good (Complexes 1, 3 and 5) to poor (Complex 4). All of the complexes showed some level of disturbance; consequently, none were considered to be in excellent condition.

In order to compare the various complexes, they were assigned one of three relative value categories (High, Moderate or Low) based on the factors described above.

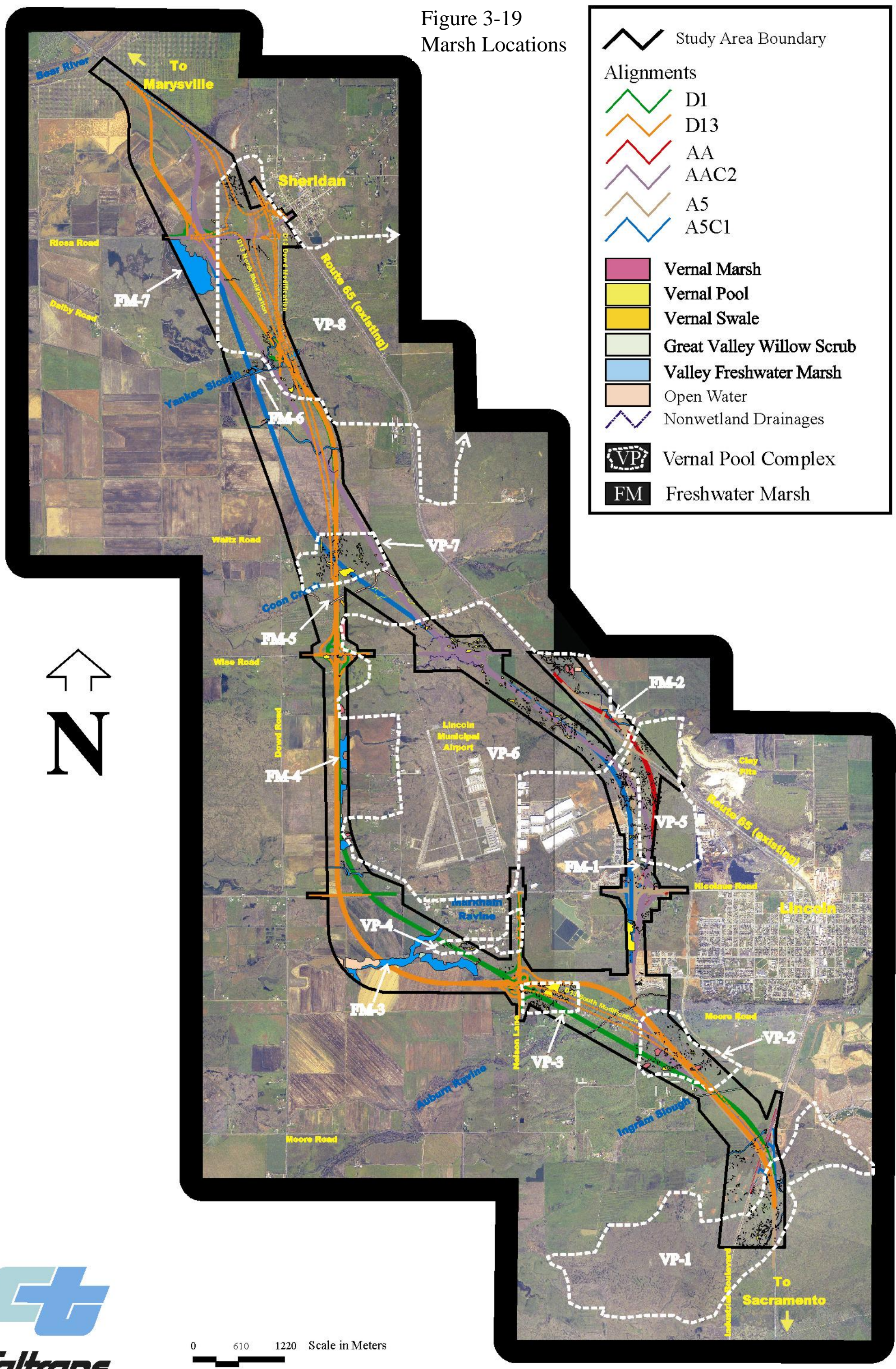
Complex 4 is clearly the lowest value complex in the Study Area due to its small size and poor condition. Complex 5 is probably the highest value due to the presence of two pool types and large number of observed special status species. Most of Complex 1, which also includes two pool types, is outside of the Study Area and has not been surveyed for special status species.

### Freshwater Marsh Complexes

Freshwater marsh is the most abundant wetland type in the Study Area (See Figure 3-19). This habitat is highly variable in configuration, habitat composition and overall quality.



Figure 3-19  
Marsh Locations





**Evaluation Factors.** Factors considered most important for freshwater marsh wetlands include the following:

Size of marsh complex - larger complexes are more likely to exhibit a diversity of habitat types, be resistant to disturbances and provide greater opportunities for wildlife use.

Complexity of habitat - marsh wetlands supporting several habitat types (e.g., open water, emergent wetlands, willow scrub, overstory canopy) are considered to have greater value.

Occurrence of special status species - wetlands supporting State or Federally listed or proposed species, or species with some other special status, are considered to have greater value.

Condition of wetlands - the general condition of the site, including the diversity of wetland and upland habitats and level of degradation. Wetlands in good condition are considered to have higher value.

The value assessment for freshwater marsh is presented in Table 3-26. The following ratings were assigned to seven freshwater marsh complexes:

|                                |                                       |
|--------------------------------|---------------------------------------|
| <i>Complex Size:</i>           | Actual wetland area                   |
| <i>Habitat Complexity:</i>     | High, Moderate or Low                 |
| <i>Special Status Species:</i> | Species recorded or expected to occur |
| <i>Condition:</i>              | Excellent, Good, Fair or Poor         |

**Table 3-26 Wetland Value Assessment for Freshwater Marsh**

| <b>Wetland No.</b>    | <b>Location</b> | <b>Wetland Acreage<sup>1</sup></b> | <b>Habitat Complexity</b> | <b>Potential Special Status Species</b>   | <b>Condition</b> | <b>Comments</b>  |
|-----------------------|-----------------|------------------------------------|---------------------------|---|------------------|--|
| <b>All Alignments</b> |                 |                                    |                           |   |                  |  |
| <b>5</b>              | Coon Creek      | 0.7 ha<br>1.9 ac                   | Moderate                  | River otter, double-crested cormorant, northwestern pond turtle, chinook salmon, Central Valley steelhead, river lamprey, Pacific lamprey | Fair             | Herbaceous marsh occurs in small, discontinuous patches along low terraces of creek; subject to regular scour; wildlife value enhanced by presence of riparian community |
| <b>6</b>              | Yankee Slough   | 3.6 ha<br>9.0 ac                   | Moderate                  | Tricolored blackbird, white-faced ibis, American bittern, northwestern pond turtle  | Fair-Good        | Primarily herbaceous marsh with cattail and tule thickets interspersed with open water and willow scrub  |

| Wetland No.                          | Location                                      | Wetland Acreage <sup>1</sup> | Habitat Complexity | Potential Special Status Species   | Condition         | Comments   |
|--------------------------------------|---|------------------------------|--------------------|--|-------------------|--|
| <b>Eastern Corridor (A5C1, AAC2)</b> |   |                              |                    |  |                   |  |
| <b>1</b>                             | Markham Ravine, west of Sierra Pacific        | 0.3 ha<br>0.7 ac             | High               | Tricolored blackbird, double-crested cormorant, Aleutian Canada goose, white-faced ibis, American bittern, northwestern pond turtle              | Good              | Marsh consists of a small pond and adjacent wetlands; high diversity with open water, mudflats, cattail/tule thickets and willow/riparian scrub        |
| <b>2</b>                             | Adjacent to existing SR 65, west of clay pits | 1.7 ha<br>4.1 ac             | Low                | Tricolored blackbird, northwestern pond turtle   | Fair              | Small, ephemeral marsh associated with low gradient drainage; minimal habitat development  |
| <b>Western Corridor (D1, D13)</b>    |   |                              |                    |  |                   |  |
| <b>3</b>                             | West end of Markham Ravine                    | 22.4 ha<br>55.2 ac           | High               | River otter, tricolored blackbird, double-crested cormorant, Aleutian Canada goose, white-faced ibis, American bittern, northwestern pond turtle | Good to Excellent | Large marsh complex including a significant amount of open water; high diversity and good habitat development  |
| <b>4</b>                             | West of airport                               | 11.3 ha<br>28.0 ac           | Low                | Tricolored blackbird, northwestern pond turtle   | Fair              | Marsh consists of low-lying areas that impound water due to blockage by ricefield berm; limited habitat development                                    |
| <b>7</b>                             | Duck ponds, Dowd and Riosa Rds.               | 19.7 ha<br>48.6 ac           | High               | Tricolored blackbird, double-crested cormorant, Aleutian Canada goose, white-faced ibis, American bittern, northwestern pond turtle              | Good              | Marsh primarily consists of man-made duck ponds; total area of marsh estimated at over 200 ac; this marsh is largely avoided by the western alignments |

<sup>1</sup> Acreage within Study Area.

### Analysis

Similar to the vernal pool complexes evaluated previously, the seven marsh complexes vary widely in the attributes considered in this evaluation. Wetland acreage within each complex ranges from less than one acre (Wetland 5) to over 55 acres (Wetland 3). Complexity ranges from low to high, and condition ranges from fair to good/excellent. All of the complexes showed some level of disturbance.

In order to compare the various marsh complexes, they were assigned to one of three value categories (High, Moderate or Low) based on the factors described above.

**Table 3-27 Value Assessment of Marsh Complexes**

|                        |   |
|------------------------|---|
| <b>High Value:</b>     | Marsh 3 - relatively large marsh complex; high diversity and good condition; habitat for several special status species<br>Marsh 7 - very large marsh complex, most of which is outside Study Area; high diversity; good condition; habitat for several special status species  |
| <b>Moderate Value:</b> | Marsh 1 - small in area and close to development but otherwise high quality due to complexity and condition of habitats; potential habitat for several special status species<br>Marsh 6 - relatively small and linear, but with pockets of good herbaceous marsh habitat   |
| <b>Low Value:</b>      | Marsh 2 - small in area with low complexity, possibly ephemeral water supply and located close to development<br>Marsh 4 - moderately large marsh complex, but with low complexity and somewhat degraded; limited habitat for special status species<br>Marsh 5 - Although Coon Creek supports a valuable riparian community and provides high quality wildlife habitat, the marsh wetlands associated with the creek are small and discontinuous |

Marsh 2 is the lowest value complex in the Study Area due to its small size, limited complexity and fair condition; Marsh 4 is similar but significantly larger. Marsh 3 is probably the highest value in the Study Area due to its large size, diversity of habitats and good to excellent condition.

### 3.8 CULTURAL RESOURCES

The National Historic Preservation Act of 1966, as amended, established the Advisory Council on Historic Preservation (ACHP) and set precedents and policies for the protection and preservation of historic and cultural resources. Section 106 of this Act mandates that Federal agencies with jurisdiction over a proposed undertaking consider the effects of that project upon any property that is included in, or eligible for inclusion in the National Register of Historic Places (NRHP).

In order to ensure that the requirements of Section 106 are met, FHWA follows procedures contained in 36 CFR 800, a set of regulations issued by the ACHP. Cultural resource investigations performed pursuant to these statutes are documented in a Historic Property Survey Report (HPSR), February 1991, copies of which are on file at Caltrans, District 3 Sacramento, 2389 Gateway Oaks, Sacramento, CA 95833.

Documentation of the Caltrans coordination with the State Historic Preservation Office can be found in Chapter 7 and Appendix D.

The cultural resource evaluation begins with the delineation of the Area of Potential Effects (APE). The APE is generally defined as the geographic area or areas within

which an undertaking may cause changes in the character or use of historic properties, if any such properties exist. The APE for this project consisted of the existing and proposed right-of-way. Field reviews and surveys of the APE, as well as archaeological record checks and examinations of historic records and archives, were conducted by qualified Department specialists. The following inventories and archives were consulted in preparing the survey reports.

- *National Register of Historic Places*, Through December 1989
- *California Historical Landmarks*, 1976
- *California Inventory of Historic Resources*, 1976
- *History of Placer County, California with Illustrations and Biographical Sketches of it's Prominent Men and Pioneers*, Thompson and West, Oakland, 1882
- *History of Placer and Nevada Counties, California*, by W.B. Lardner, and M. J. Brock, Historic Record Company, Los Angeles, 1924
- *California Place Names*, by E.G. Gudde, University of California Press, Berkeley, 1967
- *Historic Spots in California*, by M. B. Hoover, H.E. Rensch and E.G. Rensch, Stanford University Press, Stanford. 1966
- *Gold Districts of California*, by W.B. Clark, California Division of Mines and Geology, Bulletin 193, Sacramento, CA 1979
- *California Archaeological Inventory*, North Central Information Center, California State University, Sacramento
- *Grantee/Grantor Books* 1-8 Placer County Records Office, Auburn
- *Deed Books*, E, F, G, H, I, K, M, P, Q, EE, MM, QQ, 51, 54 and 168 on microfilm, Placer County Records Office, Auburn

In addition, a number of people and entities were interviewed and contacted via mail for information supporting the HPSR, including the Placer County Historical Society, the Placer County Museum, the California Native American Commission, Northern Sierra Indians, Inc., Placer Indian Association and others.

Approaches to resource identification and evaluation varied with respect to archeological (both historic and prehistoric) and historic architectural properties. Archeological properties were subject to “survey level” treatment, i.e., boundaries and features mapped, surface assemblages characterized and disturbances noted. No subsurface testing or controlled surface collections were attempted. As such, assessments of site structure, chronology, integrity etc. must be viewed as preliminary providing more



direction for further evaluation, rather than a definitive statement of significance. In contrast, the historic architectural survey results are more comprehensive, incorporating complete field and archival documentation and ultimately NRHP recommendations for each resource.

### **3.8.1 Prehistoric Resources**

The archaeological surveys identified eleven pre-historic archaeological properties within the Area of Potential Effects (APE), two of which required further study. These two prehistoric archaeological sites requiring further study included some midden deposit, concentrations of lithic debris and flaked and ground stone tools. In addition, four archaeological properties immediately adjacent to the project area were investigated. No further study will be needed because the sites are not within the footprint of the preferred alternative.

### **3.8.2 Historic Period Resources**

The Historic Architectural Survey Report (HASR) and the supplemental HASR (completed in 1989 and 1990) evaluated a total of eight properties, two of which were determined to be potentially eligible for listing in the NRHP: the Fickewirth Ranch and the Sheridan Cash Store (a.k.a. Country Store). Two additional properties in the vicinity of the project have been listed on the National Register since 1990; the Lincoln Public Library at 590 Fifth Street (listed 12/10/90) and the Women's Club of Lincoln at 499 E Street (listed 5/30/01). Both of these buildings are within the town of Lincoln and not affected by the project.

In the Supplemental HASR (dated August 1990), 39 properties were treated in accordance with the December 20, 1989 "Memorandum of Understanding Regarding Evaluation of Post-1945 Buildings, Moved Pre-1945 Buildings, and Altered Pre-1945 Buildings." Of the 39 properties, 21 do not predate 1957 and thus require no further study. The remaining eighteen properties predate 1957 and were evaluated in a Supplemental HASR dated September 2002. The application of "The Department's Interim Policy for the Treatment of Buildings Constructed in 1957 or Later" were documented in a statement of findings in the September 2002 Supplemental HASR that updates the August 1990 Supplemental HASR. None of these additional buildings were found to be eligible for the National Register.

#### **Fickewirth Ranch**

The property consists of a residence, tankhouse, windmill, long shed, timber-framed hay barn, one-time blacksmith shop and several small sheds. The buildings on the property have been maintained in their original form with little or no modification. It

is one of the oldest intact residences remaining in the local area. This property appears to meet the criterion for inclusion in the National Register under Criterion C-1, as an embodiment of its time, period and method of construction. All of the structures on the property, in their form and function contribute to this determination. The State Historic Preservation Officer (SHPO) concurred with this finding on October 21, 1991.

### Country Store

The Sheridan Cash Store, presently called the Country Store, is a one story, six course American Bond Brick structure that sports an Italianate Commercial False Front consisting of a stepped parapet with a denticular cornice, which hides a corrugated metal gable roof. It is the sole survivor of a fire that destroyed the town in 1891. This property appears eligible for inclusion in the NRHP under Criterion A for its association with Sheridan's economic development and under Criterion C. It was designated a Point of Historical Interest by the California Historic Resources Commission on August 3, 1990.

## 3.9 HAZARDOUS WASTE

Environmental Assessors Inc. performed an Initial Site Assessment (ISA) in August 1994 for all the alignments being analyzed within the project area to assess the potential for encountering hazardous materials during the construction of the project. In February 1999, Caltrans performed an updated ISA and subsequent site assessments have been conducted since then. Copies of these reports are available for review at the Department of Transportation, District 3 Sacramento office, 2389 Gateway Oaks Dr., Sacramento, CA.

The majority of the parcels were determined to be free of significant hazardous waste. Some of the factors being taken into account were industrial manufacturing activities within the alignment areas, suspected asbestos containing materials, industrial wastewater generation, recorded or observed cases of hazardous waste/materials mismanagement practices on the subject property, pesticide use, and potentially PCB-containing electrical devices.

Evaluation of other factors such as neighboring land use and the presence of listed hazardous waste sites potentially within one mile of the subject area were used to identify potential hazardous waste issues. The following databases were consulted:

**Table 3-28 Databases Searched**

| Name of Database  | Types of Records                       | Agency |
|---|--|--------|
| Contaminated Environmental Response Compensation and Liability Information System (CERCLIS) | Contaminated Sites under CERCLA (1980) | US EPA |

| <b>Name of Database</b>  | <b>Types of Records</b>   | <b>Agency</b>  |
|--|---|--|
| National Priorities List (NPL)                                       | Federal Superfund sites   | US EPA   |
| Liens  | Filed Notices of Superfund liens  | US EPA   |
| Cortese  | Hazardous Waste and Substances Site List  | CAL EPA  |
| CAL-Sites/Annual Work Plan (AWP)                                     | Contaminated sites listed on the Annual Work Plan, cleanup sites under the Bond expenditure Plan  | CAL EPA  |
| Border Zone Properties(BZP)  | Sites designated as Border Zone Properties (Deed restrictions)  | CAL EPA  |
| CAL-Sites/Abandoned Site Program Information System (ASPIS)          | Actually or potentially contaminated sites under the Abandoned Site Program   | CAL EPA  |
| Hazardous Waste Information System (HWIS)                            | Hazardous Waste Generators, treatment Storage and Disposal Facilities   | California Integrated Waste Management Board                           |
| Solid Waste Information System (SWIS)                                | Active and Inactive Sanitary landfills and Disposal Facilities  | California Integrated Waste Management Board                           |
| Leaking Underground Storage Tanks (LTANK), Underground Tanks (UTANK) | Reported leakage of hazardous substances from underground storage tanks   | California Regional Water Quality Control Board, Central Valley Region |
| Annual Work Plan (AWP)   | All verified hazardous waste sites that are or will be targeted for abatement by the CAL EPA under the Hazardous Substance Cleanup Bond Act of 1984 and the Hazardous Substances Account. | Dept. of Toxic Substances Control                                      |
| Leaking Underground Storage Tanks (LUST)                             | Leaking Underground Storage Tanks   | California Regional Water Resources Control Board                      |

The following agencies were contacted regarding underground and aboveground storage tanks, landfills and hazardous waste:

- Placer County Department of Public Works Special Districts Division (Martin, June 1994)
- Placer County Dept. of Public Works Division of Environmental Health (Buck, June 1994)

In addition, the following sources were reviewed in order to identify potential sites of concern:

- Voluntary Registered Heating and Agricultural Tanks Exempt from California Tank Regulations, as of September 25, 1985 and,
- Hazardous Materials Handlers, UST and Site Litigation (Open/Active/Closed/Temporarily Closed Facilities) as of June 30, 1994.
- Aerial Photographs

The following numbers of parcels were reviewed during the alternatives analysis and initially were determined to warrant further investigation.

**Table 3-29 Parcels Possibly Requiring Further Investigation**

| Type of Site   | Number of Parcels |
|--|-------------------|
| Abandoned equipment with potential impacts                         | 2                 |
| Listed on SPL  | 1                 |
| Existing UST+ Potential leaking                                    | 6                 |
| Surface staining, AST & UST, waste oil containers                  | 3                 |
| Storage & Use of pesticides and fuel                               | 3                 |
| Collection of discarded batteries                                  | 1                 |
| WECO Aerospace & Infinity Aviation questionable disposal practices | 1                 |
| Municipal Sewer treatment plant                                    | 1                 |

AST = Above Storage Tanks; UST = Underground Storage Tank; SPL= State Priority List, is the State equivalent of the Federal Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS list).

In addition, any building or other structure to be acquired will be evaluated for the presence of asbestos and lead-based paint. Due to the agricultural nature of the area, many of the parcels contain above ground storage tanks, which will require a Preliminary Site Investigation (PSI).

Due to the former use of waste oil potentially containing polychlorinated biphenyls (PCBs) to control dust in the railroad right of way, the railroad areas within the alignment could contain PCB affected soil as well as lead and/or diesel. These areas will require a PSI.

### **3.9.1 Hazardous Waste/Materials**

The primary federal laws regulating hazardous waste/materials are the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). The purpose of CERCLA, often referred to as Superfund, is to clean up contaminated sites so that public health and welfare are not compromised. RCRA provides for “Cradle to Grave” regulation of hazardous waste.

In addition to the acts listed above, Executive Order 12088, Federal Compliance with Pollution Control, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

Hazardous waste in California is regulated primarily under the authority of the federal Resource Conservation and Recovery Act of 1976, and the California Health and Safety Code. Other California Laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning.

Worker health and safety and public safety are issues when dealing with hazardous materials that may affect human health and the environment. Proper disposal of hazardous material is vital if it is disturbed during project construction.

Title 8, Division 1, Chapter 4, Subchapter 4, Section 1532.1, of the California Code of Regulations requires addressing Aerially Deposited Lead (ADL). Until 1986 when

EPA banned the use of lead as an additive, gasoline and emissions from automobiles contained lead for more than 60 years. During that period of time approximately 50 % of lead (Pb) released from motor vehicles was deposited within 100 ft of the roadway. Lead concentration decreases with distance from the road and increases with traffic volume, particularly along heavily traveled highways. Although gasoline no longer contains lead, accumulations persist adjacent to existing older roadways.

### 3.9.2 Lead

The United States Environmental Protection Agency (EPA) recognizes that Aerially Deposited Lead (ADL) may be encountered near-surface soils within 50 feet of major highways due to lead additives in commercially available gasoline, the use of which is now banned. Accordingly, new roadways constructed following the elimination of lead gasoline should not require screening for ADL.

Samples are collected to determine the presence for ADL at projects that have a Peak Month or Average Annual Daily Traffic (AADT) volume of 10,000 vehicles or greater. To date, all projects sampled with AADT above 10,000 vehicles have contained hazardous levels of ADL.

The preferred alternative (D13 North Modified) is located in a rural area of no concern for ADL, where sampling and analysis will not be performed. However, the project connects into two segments of existing SR 65 and may require ADL sampling and analysis at those two connections.

Based on 1985 traffic volume data from Caltrans Traffic Census Department, the Peak Month Volume at the south connection of the project near Industrial Avenue is 11,600 vehicles, and the average annual daily traffic (AADT) is 10,500 vehicles (Table 3-30)

**Table 3-30 Aerially Deposited Lead 1985 Traffic Volume Data**

| Location                          | Average Annual Daily Traffic (AADT) | Peak Month |
|-----------------------------------|-------------------------------------|------------|
| PM R12.2 North of Industrial Ave. | 10,500                              | 11,600     |
| PM 24.26 Placer County Line       | 8,000                               | 8,800      |

### Hazardous Waste Storage Sites

The preferred alternative (D13 N-Mod) requires the acquisition of several parcels that were evaluated for hazardous waste. A hazardous waste evaluation consisted of an Updated Initial Site Assessment (ISA), a record search dated January 5, 2004 and the updated report of the Initial Site Assessment performed by Professional Service Industries (PSI) dated February 26, 1999. With the exception of two parcels, no

hazardous waste storage sites or releases are known to exist within the project corridor. Access was denied to the parcels in question. Therefore, clean-up costs are estimated between \$0 and \$1 million.

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### 3.10 VISUAL IMPACTS

Improvement of the visual quality of highways, as with many aspects of the environment, has been a matter of increasing concern in recent years. The Federal-Aid Highway Act of 1968 states that "a special effort should be made to preserve the natural beauty of the countryside." Similarly, NEPA states, "it is the continuous responsibility... to assure for all Americans safe, healthful, productive, aesthetically and culturally pleasing surroundings."

A Visual Impact Assessment (VIA) Report was completed to comply with this policy in July 1994, and is available for review at the Department of Transportation District 3, Sacramento office, 2389 Gateway Oaks Dr., Sacramento, CA. The following information was summarized from that report.

#### 3.10.1 Definition of the Visual Assessment Study Area

Definition of the Study Area and all identification, inventory and evaluation of visual resources was accomplished by field inspection, including photography and visual surveys of the site. The Study Area's visual analysis includes that area from 0 to 4.8 km (0-3 mi) from the location of all alignments, and contains both natural elements and built environments. The majorities of these areas are undeveloped and comprise a rural visual environment. A smaller area is influenced by urban development around Lincoln and Sheridan.

#### 3.10.2 General Description of Existing Landscape

Terrain within the Study Area is generally flat with rolling grasslands and elevations range from 26 to 61 m (85 to 200 ft). Open grasslands dominate the area. Perennial and intermittent creeks lined with riparian vegetation (including oak stands) traverse from east to west. The general region is rural with vistas of wide, open, non-native grasslands dotted with seasonal wetlands and occasional oak stands. Rural areas tend to be agricultural with individual homes and ranches, whereas Lincoln and Sheridan have developed residential and industrial areas.

#### 3.10.3 Visual Assessment Units

To provide a focused analysis, the Study Area is divided into three distinct visual assessment units, each approximately 6.4 km (4 mi) long (see Figure 3-20). The South Lincoln visual assessment unit, from Orchard Creek to Auburn Ravine, is rural but



planned for mixed-use development (see Figure 3-21). The Lincoln visual assessment unit ranges from Auburn Ravine to Coon Creek, including the City of Lincoln and area to the west. This unit has the majority of existing and proposed development (see Figure 3-22). The third unit is the Sheridan visual assessment unit, which contains rural areas from Coon Creek to the Bear River, just north of Sheridan. Extensive development is not planned for this unit (see Figure 3-23). These three visual assessment units provide the basis for assessing impacts of each proposed alignment. To provide an overview of the existing visual landscape, and draw attention to any outstanding visual resources, these three visual units are described briefly below.

Similarities are common throughout all three visual assessment units. Due to relatively flat terrain, the scale of the project area seems huge. Wide, expansive views and the almost never-ending sky panorama makes trees, buildings, vehicles and other elements on the ground seem relatively tiny. Due to this large scale, there is a lack of variation. This continuous thread of non-dramatic visual elements occasionally appears monotonous. Non-native grassland prevails and basic visual elements, such as creeks and related trees, flatlands and rolling foothills, repeat throughout the project area, leading to a lack of drama and variety. However, in scattered locations, glimpses of the Sierra Nevada and the Sutter Buttes can be seen in the background.

### **South Lincoln Visual Assessment Unit**

Terrain east of the Lincoln Bypass' southerly connection with existing SR 65 consists of rolling hills. Middle ground views are prevalent, such as Telegraph Hill to the east. The most dominant foothill is located adjacent to Orchard Creek, with an elevation of 119 m (390 ft). Even though it is not visible to northbound travelers, southbound travelers have outstanding views of this undeveloped, pristine foothill. Background views, including crests of the Sierra Nevada, can be seen from a few locations. Trees associated with Auburn Ravine are visible on the horizon to the north and west. Remaining terrain is generally flat with occasional depressions around Orchard Creek. Since Orchard Creek does not support a heavily tree-lined riparian habitat, views extend through it to the southern horizon line. The southern horizon line on clear days is not visually appealing. Radio towers provide stark vertical accents against horizontal grasslands. The Placer County Sanitary Landfill with its huge towering mounds of refuse will be visible to southbound travelers and detracts from the visual quality. Equally obtrusive is the Ultrapower Rocklin Biomass Power Plant. Tall machinery and towering smokestacks provide man-made dominance over the surrounding middle-ground rural agricultural areas. At night, this well-lit machinery and processing equipment provide a mass of light, accenting the horizon. This same area has many high intensity industrial

developments such as auto wreckers, junkyards, silica plants, concrete mix distributors, and transport truck storage yards that lessen the visual quality and character.

Ingram Slough, a freshwater marsh, passes through the South Lincoln visual assessment unit and contains occasional tall trees and grasses. There are two small areas of oak woodland near Auburn Ravine with less than 4 ha (10 ac) each; one is between Auburn Ravine and Moore Road, and the other parallels the southern side of Moore Road. Great valley oak riparian forest follows Auburn Ravine its entire length within this visual unit. Vernal pools are prevalent throughout non-native grasslands and agricultural land.

This visual unit also contains several home sites and a large ranch. Home sites are primarily located adjacent to Moore Road. Cattle are present throughout the area. Horse ranches and extensive rice fields are scattered throughout the southwestern side of this visual assessment unit. However, future development within the south Lincoln visual assessment unit will change the visual character dramatically. Recent developments include Three-D, Lincoln Crossing, Twelve Bridges and Sterling Pointe.

### ***Viewer Quality***

Overall quality of the existing visual setting for the South Lincoln visual assessment unit is good. Topography offers some vertical relief by contrasting rolling hills with flat areas. Vegetative and wetland features are vivid in wet months of the year. Home sites are sparse and do not disrupt the integrity of the setting. General visual effects of ranches can improve a visual environment.

### **Lincoln Visual Assessment Unit**

This area contains the majority of existing development, including the City of Lincoln and the area west of Lincoln. Existing developments include Lincoln Airpark and Joiner Ranch specific plan areas, two rural subdivisions near Nelson Lane, and the Lincoln Municipal Airport along with its surrounding commercial industries. In addition, much of the previously non-developed area in the Lincoln visual assessment unit is slated for development or already developed.

Auburn Ravine and its great valley oak riparian forest flow from east to west. Vernal pools are visible in certain locations. The Lincoln Airpark Specific Plan Area and Lakeside Drive is visible to the left. The lumber processing plant and multiple clay pits are located just outside of Lincoln proper.

### ***Viewer Quality***

Overall quality of the Lincoln visual assessment unit is more interesting than the South Lincoln visual assessment unit due to the larger diversity of natural elements, such

as creeks and vernal pools. Expansive and unified views throughout agricultural areas provide harmony. Topography creates interest while ranches provide focal points. Occasional tree farms provide thick, colorful vertical elements, which contrast with the plainness of the surrounding agricultural uses. The long, large berms of the wastewater treatment plant are visible east of Nelson Drive. These slopes range up to fifteen feet high and block views to the east of the City of Lincoln and the riparian corridor along Markham Ravine. Industrial complexes around the Lincoln Municipal Airport are unsightly, unattractive and ill proportioned to the surrounding rural atmosphere. In addition, the clay pits near existing SR 65 disrupt the intactness and unity of this area. Clay pits are the largest visual encroachments within the Lincoln visual assessment unit.

### **Sheridan Visual Assessment Unit**

The Sheridan visual assessment unit is approximately 8 km (5 mi) long, extending from Coon Creek on the south to the Bear River on the north. This area includes the rural community of Sheridan, which has no plans for development in the near future.

Ranches are sparsely located along rural roads. Curving, winding tributaries, vernal pools and vast acreage of pheasant clubs dominate these expansive views. The large stand of trees is visible along the Bear River.

Terrain in the Sheridan visual assessment unit is the most varied and exciting of all the visual assessment units. A few low-lying hills exist with elevation differences ranging from 8-16 m (25-50 ft). One unique, mile-wide rolling foothill with five saddles is located between Dalby and Riosa Roads. This particular area has the most complete panoramic view of the entire project area, including views of the Sutter Buttes, Sierra Nevada and the Central Valley. Great valley riparian oak forest provides visual corridors for Coon Creek on the south and the Bear River on the north. The majority of land in the Sheridan visual assessment unit is agricultural, especially on the east side of Dowd Road. To the west of Dowd Road is non-native grassland.

### ***Viewer Quality***

The Sheridan visual assessment unit has the best visual setting due to its mixture and variety of appealing components. The overall rural feeling of quaint ranches, large spreads of expansive land, creek corridors, elevation changes and panoramic views help define the excellence of this visual experience. Due to the lack of existing and future planned development, this area may remain free of encroaching development. Panoramic views from the top of the unique mile-wide foothill between Dalby and Riosa Roads exhibit the compositional harmony and visual coherence of the Sheridan visual assessment unit.



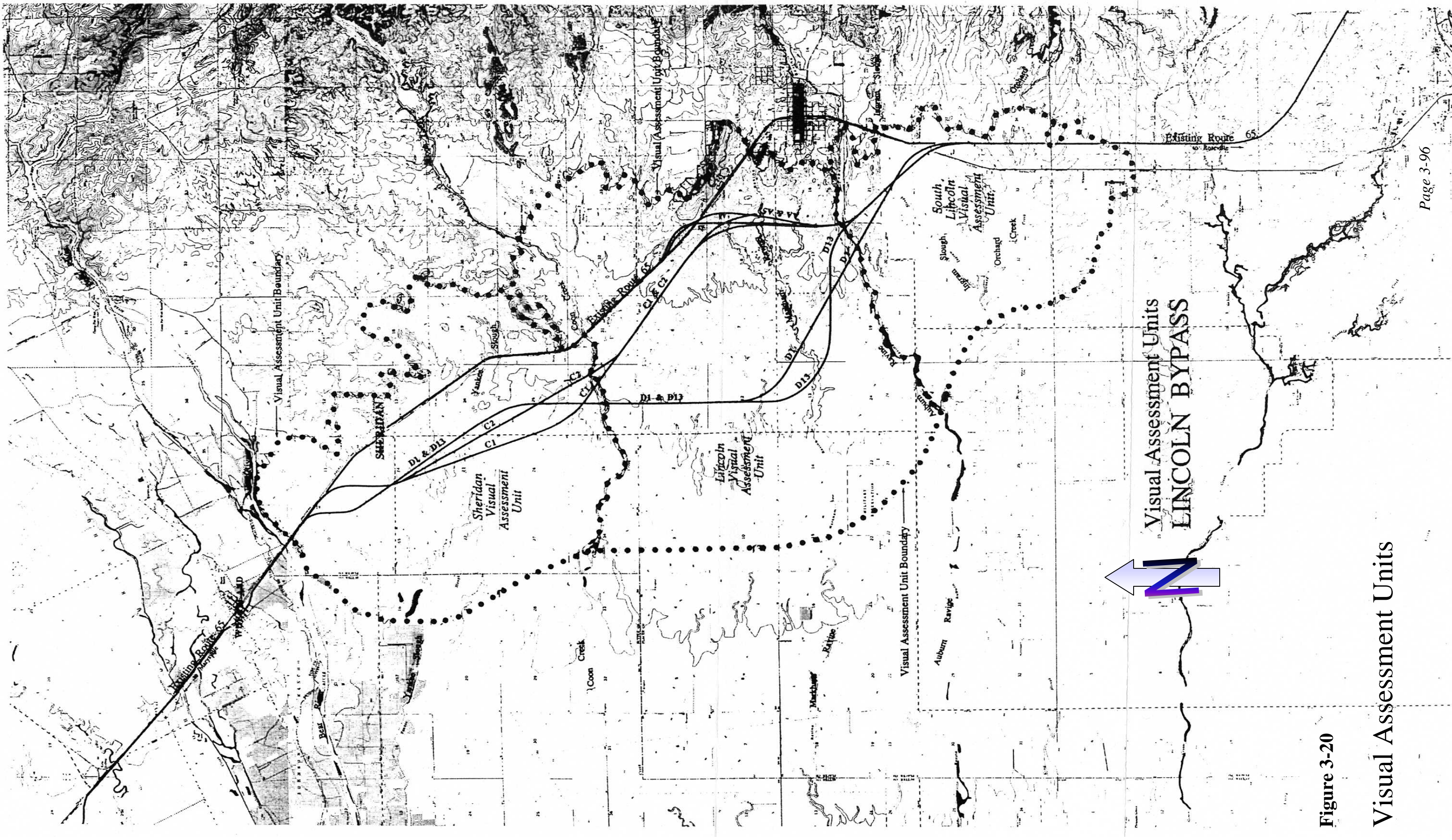


Figure 3-20

Visual Assessment Units



**Figure 3-21 South Lincoln Visual Assessment Unit**





**Figure 3-22 Lincoln Visual Assessment Unit**





**Figure 3-23 Sheridan Visual Assessment Unit**



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## 4 ENVIRONMENTAL CONSEQUENCES

This chapter describes the probable impacts of each alternative. The chapter is divided by type of resource affected such as geology, air quality, noise impacts, water quality, natural environment, cultural resources and visual impacts. The following technical studies from which these sections are derived are incorporated by reference into this Final Environmental Impact Report/Statement and are available for viewing at the Department of Transportation, District 3, Sacramento Office, 2389 Gateway Oaks Drive, Sacramento.

|                                     |                                     |
|-------------------------------------|-------------------------------------|
| Air Quality Report (amended 5/2006) | Community Impact Assessment         |
| Noise Impact Report                 | Natural Environment Study           |
| Location Hydraulic Study            | Historic Properties Survey Report   |
| Water Quality Report                | Historic Architecture Survey Report |
| Visual Impact Assessment            | Finding of No Effect                |
| Initial Site Assessment             | Traffic Studies                     |
| Initial Site Assessment Update      | Final Relocation Impact Report      |
| Revised Alternatives Analysis       |                                     |

In some cases, such as with air quality and geography, impacts to the resource will be looked at in general terms rather than by specific alternatives. For resources where impacts vary by alternative, then the impacts are evaluated by alternative.

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### 4.1 SOCIOECONOMIC IMPACTS

#### 4.1.1 Land Use Impacts

Land use impacts are evaluated in terms of consistency of the proposed project alternatives with local plans. The City of Lincoln's General Plan has a policy to pursue the construction of a SR 65 Bypass. The original proposed SR 65 Bypass, adopted by the California Legislature in 1964, was intended to be located west of the existing SR 65 alignment. In the intervening years, since no right-of-way had been purchased, development has precluded the viability of the adopted alignment as the proposed route. The circulation element of Lincoln's General Plan, updated in 1988, designated the future location of the Bypass along the AC corridor between Joiner Parkway and the Lincoln Airport. Since that time, the updated Circulation Element (1994) has designated the D13 alternative as the location of the future bypass. In addition, the City is currently updating the General Plan and will designate the D13 North Modified as the preferred alternative.

The following sections describe the potential effects of the project by subject.

## Agricultural Impacts

Agricultural land is the dominant community type in the Study Area, with approximately 42.4 percent of the Study Area classified as agricultural land in the Natural Environment Study (NES). The impacts to agricultural land vary from 51 ha (126 ac) for the AAC2 alternative up to 102.11 ha (252.3 ac) for the D13 alternative.

All of the alternatives will impact prime, unique, statewide, and locally important farmlands. Completion of the Farmland Impact Rating (See Chapter 7, Comments and Coordination and Appendix D, Farmland Impact Rating Form) showed that alternatives, A5C1 and AAC2 had point values of 158, and 157. The D1 and D13 point values were 162 and 161, respectively. The D13 South and North Modified Alternatives values were both 147.

Table 4-1 shows the amount of agricultural land in the study area. The D13 North Modified Alternative impacts 234 acres of various agricultural land. This represents 0.01 percent of the total area within a 4-mile buffer around project, which would not be a significant impact under CEQA.

**Table 4-1 Agriculture in Study Area**

| Use or type of land              | Farmland within Four-mile Areas | % Of Total Four-mile Areas |
|----------------------------------|---------------------------------|----------------------------|
| Grazing Land                     | 3,356 acres                     | 12.6%                      |
| Farmland of Local Importance     | 12,534 acres                    | 46.9%                      |
| Prime farmland                   | 3,398 acres                     | 12.7%                      |
| Farmland of Statewide Importance | 833 acres                       | 3.1%                       |
| Unique Farmland                  | 2,706 acres                     | 10.1%                      |
| Other                            | 1,441 acres                     | 5.4%                       |
| Total Farmland and Other         | 24,268 acres                    | 100.0%                     |
| Williamson Act Parcels           | 6,638 parcels                   | 86.4%                      |
| Non-Renewed Williamson Act       | 1,042 parcels                   | 13.6%                      |
| Total Parcels in Four-mile Areaa | 7,680 parcels                   | 100.0%                     |

## Residential

The Placer County general plan has a policy to promote the concentration of new residential development in higher-density residential areas located along major transportation corridors and transit routes. Although alternatives D1 and D13 North and South Modified would have rerouted the SR 65 alignment away from both Lincoln and Sheridan and alternatives A5C1 and AAC2 would have rerouted SR 65 away from Sheridan, the preferred alignment, D13 North Modified, runs relatively parallel to the two towns' western borders.

The City of Lincoln's goal and supporting policies generally address the need to ensure sufficient residential development to meet community needs while discouraging

leapfrog or premature development. By implementing the use of planned development projects, Lincoln has ensured that development would proceed with the needs of the community. The recent population growth in the Sacramento region has generated a demand for housing in the surrounding areas. According to the California Dept. of Finance and SACOG, there are currently 9,964 housing units in Lincoln with 24,964 projected for the year 2025. Lincoln has begun to accommodate this housing and has recently constructed and permitted several developments within the City. The City of Lincoln is also proposing in their draft 2050 General Plan to expand the sphere of influence out past Dowd Road to the west. The proposed project does not have an impact on Lincoln's current housing situation.

Similar to Lincoln, Sheridan has also adopted the goal to provide adequate housing for its residents although currently it is under a moratorium on new construction due to their inability to meet sewage and water needs. None of the alternatives would impact Sheridan's current housing situation.

### **Industrial**

Placer County, Lincoln and Sheridan have all adopted the goal to designate adequate land for industrial development to meet the present and future needs of all Placer County residents. There will not be any industrial units displaced by the project.

Despite Lincoln's historically modest industrial development, it appears that as new nationally recognized industries move into the Roseville/Rocklin area, Lincoln has also been receiving attention as a market prime for industrial expansion. With approximately 605 ha (1,494 ac) of vacant industrial land available there will not likely be any impacts caused by the construction of the Lincoln Bypass to industrial land uses currently defined in the general plan. Moreover, construction of the Lincoln Bypass will improve travel conditions along SR 65 that will meet the demands of anticipated industrial growth.

### **Commercial**

Similar to the industrial land use goal, commercial land use goals and policies for Placer County, Lincoln and Sheridan are to designate adequate land for commercial development to meet the present and future needs of all Placer County residents. Five of the nine mixed-use planned developments have set aside commercial land totaling 107.6 ha (266 ac).

The Draft Relocation Impact Report (DRIR) identified two businesses that would be impacted by the D1 and D13 alternatives; a well drilling business and a duck club, each of which have one to three employees. The A5C1 and AAC2 alternatives would displace the duck club.

The final Relocation Impact Report (FRIR) for the preferred alternative (D13 North Modified) has identified three businesses that would be impacted: a well drilling business, nursery and duck club.

#### **4.1.2 Growth Inducement**

Growth inducement is also discussed in the Indirect and Cumulative Impact Analysis, which can be found in Appendix I. The analysis includes information on land use, general plans, city and county policies on growth, current zoning and possible changes that can be reasonably foreseen to impact growth.

The following section addresses the direct or indirect ways in which the project may foster economic or population growth or the construction of additional housing in the surrounding area. Factors that influence growth include the cost of land, local government plans and policies, articulated public attitudes, cost and labor pool, land use and terrain, commute time, access, infrastructure and facility constraints. The effect of transportation improvements on growth is not easy to measure since it is only one element of the many factors influencing growth. Generally, Caltrans responds to a need that usually shows up as congestion or an increase in accidents in an area. Therefore, Caltrans does not directly cause growth- growth is already happening, causing congestion and decreased safety, which causes Caltrans to propose a solution to the congestion or safety issue.

That being said; as one of the factors that influence growth, transportation projects can have an indirect effect on growth. Studies have shown that development will likely occur when new roads allow access to land previously inaccessible and the area is prime for development. A new roadway may create additional market pressure for growth because one constraint for development has been lifted. However, whether or not the project will induce unplanned growth depends on political, physical and socioeconomic constraints as well. The proposed project is intended to meet the existing and/or projected traffic demand based upon the current local land use plans. At the present time, other constraints limiting growth are in place such as zoning and General Plan elements that express a desire to retain the agricultural element in the project area.

The City of Lincoln has been one of the fastest growing areas in the State and is accommodating this growth with their plans and policies. This growth has occurred regardless of the transportation infrastructure not keeping pace with the need. Factors that have contributed to the growth occurring in this area are lower housing prices, proximity to job centers, the rural quality of the town and a positive economic climate.



The following paragraphs contain a summary of the factors that can influence growth in an area. With the exception of facility constraints, the decision making involved is by the local agencies, and not within Caltrans purview.

### **Cost of Land**

Lincoln is included in SACOG's list of fastest growing communities that also includes Rancho Cordova, Vineyard, Cosumnes and West Sacramento. The City of Lincoln is projected to have a population of 33,211 in 2025, up from 26,661 in the year 2005 (<http://sacog.org/demographics/projections>). The fastest growing housing markets in the Sacramento metro region are in the communities of Laguna, Rancho Cordova, Vineyard, Lincoln and Roseville. According to the California Dept. of Finance and SACOG, there are currently 9,964 housing units in Lincoln with 24,964 projected for the year 2025. The City of Lincoln's housing prices has been consistently lower than the surrounding communities of Rocklin, Roseville and Auburn, which has been a factor for people choosing to locate in Lincoln.

Although Placer County, as a whole, has land values higher than other counties in the region, the higher cost of land would not likely create a hindrance to unplanned development. Furthermore, accessibility to undeveloped land could cause minor shifts of economic development that would have otherwise have been built elsewhere in the same region. Nevertheless, development of the undeveloped agricultural areas would also rely on any existing farmland contracts and local policies set by governmental officials.

### **Local government plans and policies**

Caltrans projects are designed to accommodate current and future traffic demand in accordance with local plans. Decision-makers in the City of Lincoln believe that growth and the accompanying increase in traffic is inevitable, and has developed strategies to manage it so Lincoln may retain the qualities of life that its citizens desire.

Local approvals for mixed-use developments up to this point have not been contingent upon the construction of the Lincoln Bypass. It is possible that portions of the Lincoln Bypass could be funded by approved and built developments; consequently, the Bypass would be a response to the growth planned by the City of Lincoln.

The City of Lincoln is currently in the process of updating its General Plan to designate areas where development will occur. The City of Lincoln is considering annexing a portion of the county located to the west of Lincoln and along the preferred alignment. In the 1988 update of the General Plan the City determined that the adoption of the proposed Land Use Element would cause significant growth inducing impacts, resulting in levels of population and urban development in excess of that which would otherwise occur within the existing city limits under the former General Plan. The



distribution and concentration of population would also be increased by adoption of the Land Use Element. These impacts were found to be both significant and un-mitigatable.

Placer County has placed a moratorium on development in the rural area northwest of Lincoln and considers Lincoln's provision of an urban level of service adjacent to agricultural lands to have the likely effect of placing development pressures on these rural areas. The "Build" alternatives could contribute to development pressures on the agricultural lands northwest of Lincoln by way of providing better accessibility than is provided by the current circulation system. By contributing to the necessary infrastructure, A5C2, AAC1, D1, D13, D13 South Modified and D13 North Modified, could indirectly influence the location, distribution and density of future development in both Lincoln and rural areas surrounding Lincoln's sphere of influence.

Portions of agricultural land adjacent to the bypass are owned by investors and hence are more likely to develop if conditions within the City allow for such development. The majorities of investors are located within the City of Lincoln or are within the proposed future annexation of the City. The remaining investors are within close proximity to the bypass but are in areas currently zoned agricultural land and not within the City or the proposed annexation. Development could potentially occur as the City of Lincoln grows and if zoning is changed in the area. Nevertheless, local officials ultimately influence changes in land use distribution through amending general plans and approval of development permits.

### **Land Use and Terrain**

Lincoln's existing land use controls involving design and property development standards have not been a constraint to area development. Even with the "No Build" alternative, significant growth in the City of Lincoln is projected. Regardless of the alternative chosen, any growth beyond the City of Lincoln would require the approval of Placer County officials and/or additional area to be adopted within Lincoln's sphere of influence.

The Study Area's prominent agricultural influence is partly due to the abundance of relatively level ground with a variety of soil types. Historically, developing areas have had few natural obstacles to impede growth and development with the exception of some prominent ravines. Rocklin and Roseville located to the south, Sheridan to the north and the foothills to the east direct this growth naturally to the west towards the airport. At this time, the area west of the bypass is zoned as agricultural. Development projects must coordinate with the respective responsible resource agencies to comply with environmental laws and regulations. Although compliance with environmental laws and

regulations may be lengthy and delay projects, development projects in the Study Area generally have few other barriers.

### **Articulated Public Attitudes**

The concern over development pressure that will be occurring over the next 20 years and the possibility of losing County natural resources prompted the creation of Placer Legacy by Placer County. Placer Legacy was established in 1998, using three working groups to provide input from a variety of stakeholders. These groups consisted of a Citizens Advisory Committee, an Interagency Working Group and a Scientific Working Group. Placer Legacy has identified County trends, resource conflicts and possible strategies to address growth pressures. Strategies currently being pursued are land acquisitions and conservation easements, agency coordination, education and incentives. In November of 2002, Placer Legacy was actively negotiating purchases with property owners for approximately 526 ha (1,300 ac) of conservation easements west and north of the proposed Lincoln Bypass to limit growth-inducing impacts. That number has risen to 834 ha (2,060 ac) of land protected in the Sierra Nevada, Sierra Nevada foothills and Central Valley. In addition, the Placer Legacy is involved in the Miners Ravine Restoration project at the Miners Ravine Reserve site in Granite Bay, the Auburn Ravine/Coon Creek Ecosystem Restoration Plan and the American River Fuel Load Reduction Plan as well as engaging in ongoing coordination with the Agricultural Commissioner's Office on matters related to agricultural conservation.

Placer Legacy's funding comes from a variety of sources including grants, general funds, mitigation funds, donations, acquisition funds, resource agencies and other miscellaneous sources. Voters defeated a ¼ cent sales tax proposed to provide a secure source of funding for Placer Legacy. However, the County and Placer Legacy are initiating a public outreach program in order to promote the Placer Legacy in the community with the goal of re-introducing the measure to the voters.

Although grass roots efforts are forming to address growth issues in the area, the majority of the residents are in favor of the Bypass due to the increased congestion occurring along the existing SR 65 through the middle of the City. Based on the comments from the Open House held for Lincoln Bypass on Dec 18, 2001, the majority of the Lincoln residents in attendance were in support of the D13 North Modified Alternative.

Sheridan is a rural community beyond Lincoln's sphere of influence that will be affected by all the alternatives by way of bypassing the town. However, Sheridan's economic stability is not reliant on the existing alignment. The surrounding farming community, albeit small, also represents the rural community beyond Lincoln and will be

impacted by all the alternatives with the loss of farmland. Letters in protest of the alternatives have been received from some of the affected landowners because these alignments will impact their land. Many of the smaller farms have been passed on from generation to generation and are dependent on farming the land for their livelihood. Not only would the segregation of their land impact their normal farming activities, encroachment of potential urban development in the area would disrupt their lifestyle.

### **Cost and Labor Pool**

Projections from SACOG's Final Interim Metropolitan Transportation Plan 2005/2007 show that the fastest growing employment markets will be in Roseville, Downtown Sacramento, West Sacramento, Rancho Cordova and Laguna, near Elk Grove. Much of the job growth will come in office and manufacturing jobs in these suburban areas. These suburban job centers will increase the demand upon transportation infrastructure and will place additional pressure on interregional travel options. Lincoln's proximity to Roseville and their own desire to capture retail and other types of employment will increase the demand on the housing stock and increase the pressure to develop further.

The Lincoln Bypass has been conceived to facilitate the planned growth of Lincoln and the anticipated expansion of the local workforce while providing for inter-regional travel. However, the City of Lincoln's plans and policies do not address the growth impacts from a growing workforce on the rural areas outside of the City's Sphere of Influence.

### **Commute Time**

Travel time between geographic points may influence the redistribution of economic development and population. The current SR 65 alignment serves both local traffic and through traffic, whereas, the Bypass would divert the through traffic from the core of Lincoln where delays occur due to traffic signals and cross traffic. With the "no build" alternative, future planned development in Lincoln would strain the capacity for the existing roadway system to move traffic efficiently. Therefore, each build alternative will ease traffic congestion on the local system by diverting traffic from Lincoln's downtown business district. As Lincoln's planned developments are constructed, the bypass could also serve as an alternative route between Lincoln's northwestern and southern areas. However, the bypass will also provide direct travel access to undeveloped agricultural lands north and west of Lincoln. Consequently, increased access to undeveloped lands may attract a greater number of commuters willing to sacrifice the shorter commutes to live in rural areas.

## Access

Access to the transportation system is one of several important factors affecting the development of land. In order to provide for expected growth in Lincoln, ultimately interchanges will be constructed at Industrial Avenue, Nelson Lane, Wise Road and Riosa Road. (See Traffic Summary, Chapter 1, section 3). The Riosa Road interchange would be necessary to serve as access to the Sheridan community. The Wise Road interchange would potentially serve as access for the rural community between Lincoln and Sheridan as well as Lincoln's northern region and would provide access to trucks in the area. In addition, the interchange at Wise Road would allow access to the airport, which the City is planning to expand. Although access to a major transportation system is critical to farm communities, a major interchange at Wise Road could add development pressures in this area.

The potential for development pressure led Caltrans to evaluate options that would relieve some of the pressure. Working in coordination with the regulatory agencies, Placer County and the City of Lincoln, a strategy to purchase conservation easements in the vicinity of the Coon Creek Watershed and Wise Road was developed. This conservation easement is now a part of the project description per the NEPA/404 MOU process.

## Infrastructure

Lincoln is attempting to direct future growth in an orderly manner by building primarily around the downtown area and projecting outward to avoid leapfrog development that could result in inadequate infrastructure. Proposed developments in Lincoln will be reviewed by the city to determine if the existing developed areas are adequate or if urban reserves would be locations that are more appropriate. The Lincoln Public Facilities Element, as part of the General Plan, has mapped out the services and physical improvements that would be necessary for transportation, parks and recreation, schools, sewage treatment, police and fire, and city government for future planned developments and would be funded through developer's fees.

The City of Lincoln has built a wastewater treatment and reclamation facility off Moore and Fiddymont Road. The old wastewater treatment facility, currently located west of the City of Lincoln near Nicolaus Road and Nelson Lane, will be dismantled. The new facility will serve customers currently using the old wastewater treatment plant as well as the residents of the new subdivisions. Other minor infrastructure improvements include well sites for back-up water and peak demand purposes.

Many of the local road improvements are being planned to accommodate the expected growth under the new general plan. Local officials have indicated that many

local roads are currently being heavily used to bypass the congestion in the city. In the unincorporated areas, the lack of urban services such as water and sewer treatment will likely deter unplanned development.

#### **4.1.3 Social Impacts**

##### **Title VI and Environmental Justice**

Executive Order 12898, *Federal Actions to Address Environmental Justice (EJ) in Minority and Low-Income Populations*, signed by the President on February 11, 1994, directs Federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and negative effects of Federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. No minority or low income populations have been identified that would be negatively impacted by the proposed project as determined above. The proposed project will not result in disproportionate impacts to minority or low income populations.

It is the policy of the California Department of Transportation, in accordance with the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, 49 CFR 21 and related statutes and regulations that no person in the state of California shall, on the grounds of race, color, sex, age, national origin, religion, or disabling condition, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity administered by the Department.

Section 3.1.5 describes the demographics of the project area. Some minorities, elderly and physically challenged persons may potentially be relocated depending on the alternative ultimately chosen. However, considering the relatively low total numbers of people that may be affected, the overall impact to these groups will be minimal.

Census 2000 shows the following blocks as having a high percentage of minorities: 213.03, 213.04 and 214.02. This area is located in close proximity to the existing alignment but is not expected to incur impacts from any of the proposed alignments.

Census tract 214.02 was identified to have the highest population of persons below poverty level, consisting of 15.8 % of the population in the census tract. Since the 1990 census data has been collected, a portion of census tract 214 has been planned for new development. Since it is assumed that low-income people will not be buying these higher priced new homes, it is predicted that the mean percentage of low-income people will decrease. The project will not have a disproportionate impact on minorities or low-income families. This project will also not discriminate, exclude from participation or deny benefits to any person on the grounds of race, color, sex, age, national origin, religion, or disabling condition.

## Community Cohesion

Table 4-2 shows that all of the proposed alternatives would impact residential neighborhoods. The alternatives AAC2 and A5C1 would have had the greatest impact on people living in single-family residences with direct impacts amounting to 461 and 469 respectively. The considerable amount of displacements expected for alternatives AAC2 and A5C1 would largely be due to the recently planned and constructed developments.

**Table 4-2 Residential Displacement Properties for Each Alternative**

| Type of Residence | A5C1 | AAC2 | D1 | D13 | D13 North Modified |
|-------------------|------|------|----|-----|--------------------|
| Single Family     | 458  | 466  | 14 | 6   | 4                  |
| Mobile Home       | 3    | 3    | 6  | 4   | 4                  |

The AC alternatives have a much greater community impact than the D alternatives. During the ten years between concurrence on the range of alternatives and the present, growth in Lincoln has skyrocketed. Several developments have been approved or are already built within the AC alignment. A recent count of residences affected by the project shows that the A5C1 alternative would have impacts to approximately 461 residents and the AAC2 alternative would have impacted 469 residents. The AC alternatives would have split established communities as well as recently constructed communities such as the Foskett Ranch and run adjacent to a proposed elementary school, separating it from the communities it would serve on the other side of the highway. Purchasing right-of-way and relocation efforts would have caused the project costs to escalate by at least \$16,000,000.

Comments voiced during open houses from the public in the existing community along the AC alternatives have voiced a passion towards their choice in moving to a smaller, more rural community that allows for a more intimate atmosphere among neighbors. The communities that would have been impacted by the AC alternatives belong to neighborhood watch programs. A neighborhood watch program is an example of a group that is committed to a community and demonstrates cohesiveness.

An alternative that would separate the community, pose safety problems, place a barrier to mobility between neighborhoods and increase noise to the level that would require soundwalls, may have an impact to the "intimate" feel that has attracted these residents to Lincoln.



Long-term effects on property values can occur when a transportation project cuts through existing communities. Many factors are considered when determining the extent of the impact on property values of a freeway or major highway such as the character of the neighborhood, supply and demand of homes, community services and other socioeconomic factors. Generally, properties abutting freeways do not appreciate in price and in some cases are priced 0.5% to 16% lower than properties further removed from the highways.

### *CEQA*

Community impacts are often hard to measure due to the lack of analytical information. There are no standards or formulas that can be used to compute short and long-term impacts when an alternative divides a community and determining significance is often subjective. The CEQA guidelines provide some questions to ask when determining whether a project impact is significant. The degree to which the question can be answered affirmatively dictates the level of significance.

Will the project:

- Disrupt or negatively affect a property of cultural significance to a community or ethnic social group,
- Induce substantial growth or concentration of population,
- Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system,
- Displace a large number of people,
- Disrupt or divide the physical arrangement of an established community;
- Conflict with established recreational, educational, religious or scientific uses of the area,
- Convert prime agricultural land to nonagricultural use or impair the agricultural productivity of prime agricultural land, or
- Interfere with emergency response plans or emergency evacuation plans.

In determining impacts to community cohesion and effects on property values, certain characteristics may provide insight as to whether or not a significant effect will occur. For example, a community is considered cohesive if it is determined that the residents have a "sense of belonging," whether they have a level of commitment to the residents of the community and neighbors, groups and institutions. Significant impact need not be determined by the length of time a community has been in existence but may be determined by the level of shared activities, ethnic group clusters and personal contact in addition to other social factors.

Although an exact determination cannot be made on the long-term impacts of the property values, it can be reasonably stated that since the AC alternatives and the D1 alternative divides existing communities, this may pose long-term socioeconomic impacts, which would change the dynamics of the existing community and could lead to a decrease in desirability of the neighborhoods. Therefore, the AC alternative would pose a significant effect under CEQA.

In contrast, the D13 South and North Modified alternative would not divide any existing communities. Although the D13 South and North Modified alternative would result in impacts to other resources, as would the AC alternative and the D 1 alternative, the overall impacts to resources and socioeconomic factors are less damaging when compared with the D 13 South and North Modified alternatives. The D 13 North Modified would not have a significant impact under CEQA.

### **Access and Circulation**

The construction of the bypass will limit the amount of access points from cross streets. All of the alignments will create a barrier from central Lincoln to the surrounding planned developments and the outlying areas within the study area. However, access will be provided by constructing overpasses, interchanges or intersections at existing or proposed major roads. Table 4-3 outlines the overpasses and interchanges proposed for each alignment. Furthermore, the bypass will improve operations by bypassing the railroad crossing in Sheridan.

If the project were not built, congestion in the City of Lincoln would continue to worsen. Additional traffic from growth associated with development along the study corridor would create substantial delays and long queues for motorists trying to utilize the existing highway system. Circulation within the city would be difficult. Operational improvements would continue, including additional signals or widening for turn lanes for added capacity in some areas. However, additional signals would cause further delay and congestion to what is already being experienced.

**Table 4-3 Overpasses and Interchanges at Local Streets**

| Cross Street             | Alternatives    |                 |                 |  |  |  |
|--------------------------|-----------------|-----------------|-----------------|--|--|--|
|                          | A5/C1           | AA/C2           | D1              | D13  | D13 South Modified                             | D13 North Modified                             |
| <b>Industrial Ave.</b>   | I/C             | I/C             | I/C             | I/C  | I/C  | I/C  |
| <b>Ferrari Ranch Rd.</b> | O/C or U/C      | O/C or U/C      | O/C or U/C      | U/C  | U/C  | U/C  |
| <b>Moore Road</b>        | CDS             | CDS             | CDS             | CDS  | CDS  | CDS  |
| <b>Nelson Lane</b>       | N/A             | N/A             | I/C             | At Grade Intersection<br>(I/C planned by City) | At Grade Intersection<br>(I/C planned by City) | At Grade Intersection<br>(I/C planned by City) |
| <b>Nicolaus Road</b>     | I/C             | I/C             | O/C             | O/C  | O/C  | O/C  |
| <b>Wise Road</b>         | I/C             | I/C             | I/C             | I/C  | I/C  | I/C  |
| <b>Dowd Road</b>         | O/C or CDS + FR | O/C or CDS + FR | O/C or CDS + FR | O/C or CDS + FR                                | O/C or CDS + FR                                | CDS + FR                                       |
| <b>Dalby Road</b>        | CDS             | CDS             | N/A             | N/A  | N/A  | N/A  |
| <b>Riosa Road</b>        | I/C             | I/C             | I/C             | I/C  | I/C  | I/C  |

*I/C=interchange O/C=overcrossing N/A=not applicable; alignment does not cross road CDS=Cul de Sac FR=Frontage Road*  
 (All alternatives include a partial interchange at Industrial Boulevard and at-grade intersections with right-of-way for future full interchanges)

### **Parking Impacts**

No parking impacts are anticipated with the construction of any of the alignments. In fact, by bypassing the existing alignment through the City of Lincoln it is expected that parking will be easier for shoppers within the City of Lincoln. Furthermore, relinquishment of the existing alignment would also allow the City of Lincoln to reconfigure parking to provide extra spaces if desired.

#### **4.1.4 Relocation Impacts**

As shown in Table 4-4 all of the proposed alternatives would have some impact on residential neighborhoods. Alternative AAC2 would have the greatest impact on people living in single-family residences with impacts to housing amounting to 469 homes. Similarly, the A5C1 alignment would also have impacts to 461 residences. The considerable amount of displacements expected for both these alternatives is largely due to the significant amount of planned and newly constructed residential developments that have occurred in these corridors over the last two to three years.

**Table 4-4 Residential & Business Displacement Properties for Each Alternative**

| Type of Residence                | Alternative    |                |                |                |                |                 |
|----------------------------------|----------------|----------------|----------------|----------------|----------------|-----------------|
|                                  | A5C1           | AAC2           | D1             | D13            | D13 S          | D13 N           |
| Residences                       | 461            | 469            | 20             | 10             | 10             | 8               |
| Businesses                       | 5              | 2              | 6              | 3              | 1              | 3               |
| R/W Cost estimate (year 2006 \$) | \$72.7 million | \$46.4 million | \$29.4 million | \$31.7 million | \$31.7 million | \$36.0 million* |

\*Since the selection of the LEDPA, D13 North Modified, a Final Relocation Impact Report has been prepared for only this alternative. The approximate cost of right-of-way is currently estimated at \$60 million. Table 4-4 shows the right of way costs at a comparable level of design. Refining design for the D 13 North Modified has resulted in an increase in right of way costs. Since the other alternatives have not been designed to the degree that the D13 North Modified has, it is no longer appropriate to compare right of ways costs.

Although Lincoln's future planned developments expect to add approximately 16,000 additional housing units, the Draft Relocation Impact Report states that the A5C1 and AAC2 alternatives will impact the City of Lincoln's housing stock and may be disruptive to the City's General Plan.

The Department's Relocation Assistance Program, required by Federal and state law, provides each displaced resident with help in finding replacement housing. There are eight residences and three businesses requiring relocation. Of the eight residences, four are single-family residences and four are mobile homes. Payments would include moving expenses and payments to enable displaced residents to obtain comparable decent, safe, and sanitary housing within their financial means. No residential occupant will be displaced unless replacement housing is available. If the mobile homes cannot be relocated at the time of displacement, due to age and condition, the occupants may be eligible for assistance in purchasing either a new mobile home or a conventional single-family residence. With respect to those residential properties involving a partial acquisition, owners of property appraised as having an uneconomic remnant may request relocation assistance. Adequate housing stock is expected to be available for those requiring relocation.

The relocations will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and Title VI of the Civil Rights Act of 1964. Title VI prohibits discrimination based on race, color, religion, sex, disabilities, age and national origin in providing services and benefits on Federally assisted projects. The Department's Relocation Assistance Advisory Service can be found in Appendix G.

Both businesses affected by the proposed project are expected to find suitable replacement locations. Business displacement problems can be minimized by way of the Department's early purchase of business properties and leaseback arrangements. This would allow time for business property relocation and any construction needed while existing facilities are kept in operation. Displaced businesses are eligible for relocation

assistance including payment for moving and possible other expenses. Displaced businesses that are unable to relocate, or are expected to suffer a substantial loss of existing patronage, could be eligible for up to \$20,000 “in lieu” payment through the Relocation Assistance Program.

#### **4.1.5 Housing Impacts**

The area located along the south side of Nicolaus Road, just west of Joiner Parkway is developing as residential and public (school and community center) uses. This development is adjacent to the location where the A5C1 and AAC2 alignments intersect Nicolaus Road and a possible future interchange may be constructed.

The large amount of displacements from the A5C1, and AAC2 alternatives would impact the City of Lincoln’s housing stock, impact the newly built communities and may be disruptive to the City of Lincoln’s general plan. The additional impacts to housing from the “AC” alternatives would have also increased the right-of-way costs considerably. The D1 and D13 alternatives are anticipated to have no negative impact on the Lincoln community. All relocations associated with this project would be subject to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended 1987.

#### **4.1.6 Community Facilities and Services Impacts**

Each of the alternatives analyzed, except the “No Build” alternative, would not reduce the accessibility to public services in the Study Area. All the proposed alternatives would reduce response times for emergency vehicles due to the improved circulation expected. All of the alignments would also remove the obstacle of the at-grade railroad crossing at Sheridan. The “No Build” alternative would increase response time due to congestion.

#### **4.1.7 Traffic Impacts**

Traffic congestion would be alleviated within the Lincoln city limits by removing inter-regional travelers.

#### **4.1.8 Economic Impacts**

##### **Regional Economic Impacts**

The estimated tax revenue lost to local government resulting from the right-of-way purchase of the ultimate alternative chosen, including the removal of residences and businesses from the tax base, is expected to be negligible. Revenue losses would be partially offset by the decrease in costs to the city and county associated with providing services to residential properties. In addition, past studies indicate most property values

may increase in those areas near the new facility because of increased access. This will net the city and county additional property tax revenue when the properties resale.

Project construction dollars would generate jobs and income over a two to three year construction period. In the 1980's, FHWA determined that a \$1 million investment would directly generate ten on-site, full-time construction jobs. When other jobs are considered as part of the formula, such as off-site, construction related or service industry related jobs, the total number of jobs created amount to approximately 23 for each \$1 million investment. It has not been determined how these numbers would translate considering the current economic climate; however, these figures are not expected to change significantly.

### **Impacts on Local Businesses and Industry**

The existing commercial shopping and services area in Lincoln and Sheridan are generally located on and adjacent to SR 65. Some businesses in the Lincoln community have expressed concern that the construction of the Bypass may result in the decline of patronage.

It is difficult to predict the economic impacts of a bypass on businesses that are normally located on the main thoroughfare due to the number of variables affecting the local economy. Some businesses that may be negatively affected by the Bypass include motels, cafés, fast-food restaurants, and gas stations since much of their services are provided to pass through motorists. Although there are several commercial businesses that serve the motoring public, a large segment of the business activity in the downtown Lincoln area cater to local residents. In fact, the rerouting of traffic may result in an increase in sales and income to some businesses as the community members find it more convenient to shop downtown because pedestrian safety is enhanced and more parking is available for local residents.

Since the Bypass is predicated on future development, the downtown business climate should improve due to the increase in the local population growth. Furthermore, the Lincoln Redevelopment Agency has been promoting the concept of developing the downtown business district as "Old Towne." Lincoln's long-range effort to attract tourists and local residents to shop in the central business district is to capitalize on the historic fabric of the area.

The Bypass is likely to enhance the access to and availability of regional commercial centers existing or planned in Roseville. However, the ten-mile distance from Lincoln is currently not a major obstacle. Furthermore, the businesses that local residents would most likely seek in Roseville are generally not available in Lincoln.



**Land Use Impacts**

After the completion and approval of the environmental document, the CTC will select and adopt a corridor alignment to be reserved for the ultimate construction of the Lincoln Bypass. The Placer County General Plan, the City of Lincoln General Plan and the Sheridan General Plan will be revised, as necessary, to reflect the corridor alignment.

**Economic Impacts**

Economic impacts to the local economy with the construction of any of the alternatives are minimal. Although a few businesses may experience short-term impacts due to the Lincoln Bypass, long-term impacts are not expected. Furthermore, with the large amount of commercial development anticipated for the area, businesses will have the opportunity to relocate near the new alignment.

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**4.2 BICYCLE AND PEDESTRIAN IMPACTS**

No negative impacts to bicyclists are anticipated with this proposed project. There are no accommodations for bicycles on the Lincoln Bypass; however, the existing SR 65 will remain as a bicycle route.

The diversion of “through” traffic from the downtown business district will likely promote pedestrian circulation from nearby residential areas. The proposed project will have crosswalks and push buttons at all signalized intersections and all pedestrian crossings will be ADA compliant. The Ferrari Ranch undercrossing, to be approved and constructed by the city, and the future interchange will provide a full pedestrian facility. On some portions of Industrial Avenue, sidewalks and ADA compliant ramps are included.

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**4.3 GEOGRAPHY AND TOPOGRAPHY**

None of the proposed alternatives will substantially change the topography within the project area. The proposed bypass will be designed to provide for an all-weather route to ensure safe passage of emergency vehicles and serve as an emergency evacuation route. The minimum roadway profile grade elevation will be 1.43 meters (4.7 ft) above the existing ground elevation. This profile grade will ensure that the proposed bypass will be above potential floodwaters and provide coverage for future drainage features. The drainage features will maintain the existing hydrology of the area to the greatest extent possible.

The soils in the area present no particular problems with construction. The project will be designed to withstand seismic activity that could be expected in the area.

## Reclamation of Minerals

A large amount of fill will be required for this project. Locating the fill will be the responsibility of the contractor. Reclaiming minerals from the fill will also be the responsibility of the contractor.

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## 4.4 AIR QUALITY

This section evaluates air quality impacts that could result from the implementation of the proposed project. Air pollutant emissions associated with the construction of the project, such as fugitive dust from grading/site preparation and equipment exhaust could occur over the short-term during construction. Long-term emissions could result from the use of the proposed highway/freeway, primarily from vehicular traffic. The proposed project is not expected to generate additional traffic. Traffic would be rerouted from other area roadways to the proposed SR 65. Regional traffic trips would remain similar. Therefore, no new long-term regional emissions would result from implementation of the proposed project.

The proposed bypass route will improve traffic movement in the general vicinity, thereby lowering the concentration of pollutants emitted by motor vehicles. Consequently, no significant regional or local air quality impacts are anticipated. The following sections discuss the possible emission generating activities associated with the proposed project and their significance.

### 4.4.1 Naturally Occurring Asbestos

Naturally occurring asbestos (NOA) can be found in serpentinite and asbestos bearing ultramafic rocks, and can be released when that rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. Placer County is on the Office of Planning and Research's list of counties that have been identified as being particularly abundant with these types of rocks. However, the predominant rock type in the project location is from the Mehrten Formation that does not contain asbestos. The California Department of Mining and Geology (CDMG) Map (Open File Report 2000-19, August 2000) shows no areas of NOA.

Asbestos has also been used in the construction of older buildings and highway structures. Demolition of these older structures could cause asbestos contamination. Comprehensive inspections that meet the requirements of current EPA and OSHA regulations are recommended before any demolition activities associated with structures in the proposed alignment corridor. Any component that will be impacted by demolition activities should be characterized to ensure proper handling and disposal.

#### 4.4.2 Long-term Microscale Projections

Each build alternative has its own layout and configuration; therefore, the air pollutant emissions level will be different for each alternative and thus are analyzed separately. In order to make a comparison, the same receptor locations are used throughout all alternatives and the results are compared to determine the difference in impact. Receptor locations are illustrated in Figure 3-12, located in Chapter 3. Receptor locations were determined by locating the nearest residents to each proposed alignment. In the case of planned development, receptors were estimated using maps provided by the City of Lincoln.

##### Carbon Monoxide (CO)

Local CO emissions level was assessed with the California Air Resources Board (CARB) approved CALINE4 air quality model, which allows microscale CO concentrations to be estimated along roadway corridors or near intersections. This model is designed to identify localized concentrations of CO, often termed "hot spots." The highest CO concentrations typically occur during peak traffic hours and volume, which represents a worst-case scenario for the calculation of CO emissions. Traffic volumes generated by the Departments' traffic analysis report for all the alternatives for the years 2015 and 2025 were used in the model (Caltrans, December 1999).

CO concentrations were calculated for the one-hour averaging period and compared to the State one hour CO standard of 20 ppm. CO eight-hour averages were calculated from the one-hour CO calculations, using techniques outlined in the Department's Carbon Monoxide Protocol. A persistent factor of 0.7 was used for the conversion of one-hour CO level to the eight-hour CO level. Concentrations are expressed as parts per million (ppm) at each receptor location.

Data in Table 4-5 illustrates the different impact levels of carbon monoxide (CO) concentration in the general vicinity of the project for the year 2015 and 2025, respectively. No significant impact on local air quality is expected from the proposed project in the years 2015 or 2025. The increases in CO concentrations are equal to or less than 0.1 ppm (particle per million) for both the one-hour and the eight-hour occurrences, which is considered minor and negligible. In addition, the CO concentrations are below the State and Federal standards, and no CO hot spots were identified. No nearby sensitive receptors would be affected by project related local air quality impacts. Therefore, implementation of the project would not have a negative impact on local air quality in the years 2015 and 2025.

Table 4-5 CO Concentration for 2015 and 2025

| Receptor         | 1 Hour CO Conc. <sup>1</sup> (ppm) | 8 Hour CO Conc. <sup>2</sup> (ppm) | Exceeds Federal Standards |      | Exceeds State Standards |      | Receptor | 1 Hour CO Conc. <sup>1</sup> (ppm) | 8 Hour CO Conc. <sup>2</sup> (ppm) | Exceeds Federal Standards |      | Exceeds State Standards |      |
|------------------|------------------------------------|------------------------------------|---------------------------|------|-------------------------|------|----------|------------------------------------|------------------------------------|---------------------------|------|-------------------------|------|
| 1 hr             | 8 hr                               | 1 hr                               | 8 hr                      | 1 hr | 8 hr                    | 1 hr | 8 hr     | 1 hr                               | 8 hr                               | 1 hr                      | 8 hr | 1 hr                    | 8 hr |
| <b>A5C1 2015</b> |                                    |                                    |                           |      |                         |      |          |                                    |                                    |                           |      |                         |      |
| REC1             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC14    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC2             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC15    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC3             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC16A   | 4.3                                | 2.5                                | No                        | No   | No                      | No   |
| REC4             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC16B   | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC5             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC17    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC6             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC18    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC7             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC19    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC8             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC20    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC9             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC21    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC10A           | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC22    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC10B           | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC23    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC13            | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC24    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
|                  |                                    |                                    |                           |      |                         |      | REC25    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>AAC2 2015</b> |                                    |                                    |                           |      |                         |      |          |                                    |                                    |                           |      |                         |      |
| REC1             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC15    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC2             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC16A   | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC3             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC16B   | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC4             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC17    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC5             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC18    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC6             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC19    | 4.3                                | 2.5                                | No                        | No   | No                      | No   |
| REC7             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC20    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC8             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC21    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC9             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC22    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC10A           | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC23    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC10B           | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC24    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC13            | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC25    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC14            | 4.2                                | 2.4                                | No                        | No   | No                      | No   |          |                                    |                                    |                           |      |                         |      |
| <b>D1 2015</b>   |                                    |                                    |                           |      |                         |      |          |                                    |                                    |                           |      |                         |      |
| REC1             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC12    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC2             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC13    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC3             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC14    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC4             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC15    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC5             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC17    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC6             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC18    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC7             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC19    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC9             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC20    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC10B           | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC21    | 4.3                                | 2.5                                | No                        | No   | No                      | No   |
| REC11            | 4.2                                | 2.4                                | No                        | No   | No                      | No   |          |                                    |                                    |                           |      |                         |      |
| <b>D 13 2015</b> |                                    |                                    |                           |      |                         |      |          |                                    |                                    |                           |      |                         |      |
| REC1             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC12    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC2             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC13    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| REC3             | 4.2                                | 2.4                                | No                        | No   | No                      | No   | REC14    | 4.2                                | 2.4                                | No                        | No   | No                      | No   |

| Receptor         | 1 Hour CO Conc. <sup>1</sup> (ppm) | 8 Hour CO Conc. <sup>2</sup> (ppm) | Exceeds Federal Standards |      | Exceeds State Standards |      | Receptor      | 1 Hour CO Conc. <sup>1</sup> (ppm) | 8 Hour CO Conc. <sup>2</sup> (ppm) | Exceeds Federal Standards |      | Exceeds State Standards |      |
|------------------|------------------------------------|------------------------------------|---------------------------|------|-------------------------|------|---------------|------------------------------------|------------------------------------|---------------------------|------|-------------------------|------|
|                  |                                    |                                    | 1 hr                      | 8 hr | 1 hr                    | 8 hr |               |                                    |                                    | 1 hr                      | 8 hr | 1 hr                    | 8 hr |
| <b>REC4</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC15</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC5</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC17</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC6</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC18</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC7</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC19</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC9</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC20</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC11</b>     | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC21</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>A5C1 2025</b> |                                    |                                    |                           |      |                         |      |               |                                    |                                    |                           |      |                         |      |
| <b>REC1</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC15</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC2</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC16A</b> | 4.3                                | 2.5                                | No                        | No   | No                      | No   |
| <b>REC3</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC16B</b> | 4.3                                | 2.5                                | No                        | No   | No                      | No   |
| <b>REC4</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC17</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC5</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC18</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC6</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC19</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC7</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC20</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC8</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC21</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC9</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC22</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC10A</b>    | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC23</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC10B</b>    | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC24</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC13</b>     | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC25</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC14</b>     | 4.2                                | 2.4                                | No                        | No   | No                      | No   |               |                                    |                                    |                           |      |                         |      |
| <b>AAC2 2025</b> |                                    |                                    |                           |      |                         |      |               |                                    |                                    |                           |      |                         |      |
| <b>REC1</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC15</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC2</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC16A</b> | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC3</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC16B</b> | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC4</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC17</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC5</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC18</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC6</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC19</b>  | 4.3                                | 2.5                                | No                        | No   | No                      | No   |
| <b>REC7</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC20</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC8</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC21</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC9</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC22</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC10A</b>    | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC23</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC10B</b>    | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC24</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC13</b>     | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC25</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC14</b>     | 4.2                                | 2.4                                | No                        | No   | No                      | No   |               |                                    |                                    |                           |      |                         |      |
| <b>D1 2025</b>   |                                    |                                    |                           |      |                         |      |               |                                    |                                    |                           |      |                         |      |
| <b>REC1</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC11</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC2</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC12</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC3</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC13</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC4</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC14</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC5</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC15</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC6</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC17</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC7</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC18</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC9</b>      | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC19</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC10B</b>    | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC20</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   |

| Receptor   | 1 Hour CO Conc. <sup>1</sup> (ppm) | 8 Hour CO Conc. <sup>2</sup> (ppm) | Exceeds Federal Standards |      | Exceeds State Standards |      | Receptor     | 1 Hour CO Conc. <sup>1</sup> (ppm) | 8 Hour CO Conc. <sup>2</sup> (ppm) | Exceeds Federal Standards |      | Exceeds State Standards |      |
|--|------------------------------------|------------------------------------|---------------------------|------|-------------------------|------|--------------|------------------------------------|------------------------------------|---------------------------|------|-------------------------|------|
|  |                                    |                                    | 1 hr                      | 8 hr | 1 hr                    | 8 hr |              |                                    |                                    | 1 hr                      | 8 hr | 1 hr                    | 8 hr |
|  |                                    |                                    |                           |      |                         |      | <b>REC21</b> | 4.3                                | 2.5                                | No                        | No   | No                      | No   |
| <b>D13 2025</b>  |                                    |                                    |                           |      |                         |      |              |                                    |                                    |                           |      |                         |      |
| <b>REC1</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC12</b> | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC2</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC13</b> | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC3</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC14</b> | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC4</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC15</b> | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC5</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC17</b> | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC6</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC18</b> | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC7</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC19</b> | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC9</b>  | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC20</b> | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| <b>REC11</b>   | 4.2                                | 2.4                                | No                        | No   | No                      | No   | <b>REC21</b> | 4.2                                | 2.4                                | No                        | No   | No                      | No   |
| 1 Includes ambient one hour CO concentration of 4.2 ppm. The State's one hour CO standard is 20 ppm. |                                    |                                    |                           |      |                         |      |              |                                    |                                    |                           |      |                         |      |
| 2 Includes ambient eight hour CO concentration   |                                    |                                    |                           |      |                         |      |              |                                    |                                    |                           |      |                         |      |

As shown in Table 4-5, none of the alternatives will have a substantial impact on local air quality. The project would alleviate local congestion and have beneficial regional effects. Therefore, in accordance with the CEQA, this project is not considered to have a substantial impact on existing ambient air quality.

### Air Quality Conformity Determination

The proposed project is partially funded and is programmed in the SACOG Metropolitan Transportation Plan (MTP) 2027 which was found to conform by the SACOG Board on March 16, 2006, and FHWA and FTA adopted the air quality conformity finding on April 20, 2006. The project is also included in the SACOG's financially constrained 2004-2006 MTIP, which was found to conform by FHWA and FTA on April 20, 2006. This proposed project's preferred alternative design, concept and scope are consistent with the above-mentioned documents, the 2004 STIP, and the proposed 2006 STIP. A local air quality analysis (Carbon Monoxide) has been performed.

In order for the project to be included in the MTIP, it must be in conformance with air quality standards and must meet certain criteria. This project has been analyzed and will not significantly change the air quality in the City of Lincoln.

The SIP was adopted in 1994 in compliance with the 1990 Amendments to the Federal Clean Air Act. At that time, our region could not show that we would meet the federal 1-hour standard by 1999. In exchange for moving the deadline to 2005, the region accepted a designation of "severe non-attainment," with additional emission requirements on stationary sources.



In July 1997, EPA promulgated a new 8-hour standard for ozone. This change would lower the standard for ambient ozone from 0.12 parts per million of ozone averaged over one hour to 0.08 parts per million of ozone averaged over eight hours. In general, the 8-hour standard is more protective of public health and more stringent than the federal 1-hour standard. Key aspects of the 8-hour ozone rule are the new designations and non-attainment classifications in June 2004, and the revocation of the 1-hour ozone standard in June 2005. However, 8-hour ozone non-attainment areas remain subject to control measure commitments that applied under the 1-hour ozone standard. The Sacramento region has been designated as a non-attainment area for the federal 8-hour ozone standard with an attainment deadline of June 2013. As required by a court settlement, US EPA issued final non-attainment Area Designations for 8-hour ozone on April 15, 2004 for the 8-hour ozone standard.

Air quality models are used to demonstrate that the project's emissions will not contribute to the deterioration or impede the progress of air quality goals stated in the AQAP. The SACOG Regional Air Quality Model uses project specific data to estimate the amount of pollutants generated from the implementation of a project. The results for the "No build" and "Build" scenarios in the horizon year (2025) are compared to the AQAP air quality projections. If the analysis shows compliance with the requirements, it is considered consistent with the AQAP.

The proposed project is partially funded and is programmed in the SACOG Metropolitan Transportation Plan (MTP) 2027 which was found to conform by the SACOG Board on March 16, 2006, and FHWA and FTA adopted the air quality conformity finding on April 20, 2006. The project is also included in the SACOG's financially constrained 2004-2006 MTIP, which was found to conform by FHWA and FTA on April 20, 2006. This proposed project's preferred alternative design, concept and scope are consistent with the above-mentioned documents, the 2004 STIP, and the proposed 2006 STIP. A local air quality analysis (Carbon Monoxide) has been performed.

This project is in accordance with the goals and policies of the City's General Plan that is to provide for the long-range planning and development of the County's roadway system in order to ensure the safe and efficient movement of people and goods. The alternatives proposed are necessary for the safety of the public in the City of Lincoln and would accommodate future planned growth that is projected in the general vicinity. As shown in Table 4-5, the proposed project will not substantially contribute to or cause deterioration of existing air quality; therefore, mitigation measures are not required for

the long-term operation of the project. Hence, the proposed project is considered to be consistent with the City of Lincoln General Plan and the Placer County General Plan, and therefore consistent with the AQAP and in conformity with the State Implementation Plan (STIP).

### **Short-Term Construction Related Impacts**

#### ***Construction Equipment Exhaust Emissions***

Construction activities produce combustion emissions from various sources such as site grading, utility engines, on-site heavy-duty construction vehicles, equipment hauling materials to and from the site and vehicles transporting the construction crew. The use of construction equipment on site would result in localized exhaust emissions. On site exhaust emissions during construction would vary daily, as construction activity levels change. The Department's standard specifications for construction would be adhered to in order to reduce construction related emissions, thereby reducing impacts to less than significant under CEQA.

### **Avoidance and Minimization Measures**

#### ***Construction Impacts***

The following measures are provided to reduce air pollutants generated by vehicle and equipment exhaust during the project construction phase:

- The contractor shall ensure that grading plans include a statement that all construction equipment will be tuned and maintained in accordance with the manufacturer's specifications.
- The contractor shall utilize electric powered equipment in lieu of gasoline-powered engines where feasible.
- The contractor shall ensure that grading plans include a statement that work crews will shut off equipment when not in use.
- The contractor shall time the construction activities so as not to interfere with peak hour traffic and minimize obstruction of through traffic lanes adjacent to the site. If necessary, a flag person shall be retained to maintain safety adjacent to existing roadways.
- The contractor shall support and encourage ridesharing and transit incentives for the construction crew.

The following measure would reduce or minimize air pollutant emissions associated with asphalt paving:

- The construction contractor shall adhere to the requirements of the rules addressing the emission control measures covering the asphalt paving emissions.

In addition to the recommended avoidance and minimization measures listed above, the Department's Standard Construction Specifications shall be adhered to further reduce emissions. Following is a list of avoidance and minimization measures to reduce the emission of fugitive dust.

- All disturbed areas, including storage piles, that are not being actively utilized for construction purposes shall be effectively stabilized for dust emissions using water, chemical stabilizers/suppressants, or vegetative ground cover.
- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized for dust emissions using water or chemical stabilizers/ suppressants.
- All land clearing, grubbing, scraping, excavations, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled for fugitive dust emissions utilizing applications of water, or by presoaking.
- When materials are transported off site, all material shall be covered or effectively wetted to limit visible dust emission; or at least six inches of freeboard space from the top of the container shall be maintained.
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. The use of dry rotary brushes is expressly prohibited, except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. The use of blower devices is expressly forbidden.
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized for fugitive dust emissions utilizing sufficient water or chemical stabilizers/suppressants.
- Traffic speeds on unpaved roads shall be limited to 15 mph.
- Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- Wheel washers for all exiting trucks shall be installed, or all trucks and equipment washed off before leaving the site.
- Windbreaks shall be installed at windward side(s) of construction areas.
- Excavation and grading activity shall be suspended when winds exceed 20 mph.

- Areas subject to excavation, grading and other construction activity shall be limited at any one time.
- Compliance with the above minimization measures would lessen the fugitive dust impact during construction.

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## 4.5 NOISE IMPACTS

Federal guidelines for assessing traffic noise are contained in Title 23 of the Code of Federal Regulations Part 772, (23 CFR 772), “Procedures for Abatement of Highway Traffic Noise and Construction Noise.” These guidelines require consideration of noise abatement measures for highway projects when traffic related noise impacts have been identified. The Federal and State guidelines state that there will be a noise impact when design year noise levels approach or exceed the noise abatement criterion (NAC) (coming within one dBA of the NAC) for the specified land use, or when the predicted traffic noise levels substantially exceed, by 12 dBA or more, the existing noise levels.

The land use in the Noise Impacts Study Area is primarily rural/agricultural. At present there are scattered residences along all the alignments, however, development has been completed and planned for much of the area southeast of the airport. All of the identified receptors are considered Activity Category B (NAC of 66 dBA) or C (NAC of 72 dBA).

The ultimate design year is 2025 and is considered in the traffic noise model. Four alignments, AAC2, A5C1, D1 and D13, were modeled using Sound32. Of the 31 receptor locations, eight receptors represent undeveloped lands for which development is underway or has been planned, designed and programmed prior to the date of public knowledge of the planned project. When traffic noise impacts are predicted for undeveloped lands for which development is planned, designed and programmed before the date of public knowledge, noise abatement must be considered as part of the project. (See Figure 3-12, Noise and Air Receptors.)

Noise impacts from the D13 South Modified have not been quantitatively analyzed because all of the existing and future planned housing developments, represented by receptors NR-15, NR-21, NR-27 and NR-28, are located north of the D13 alignments. As D13 South Modified is south of D13, future noise levels in these vicinities are predicted to be less than D13. It is therefore assumed that traffic noise impacts and any proposed abatement measures for D13 South Modified to be equivalent to the D13.

The D13 North Modified traverses land uses that are principally rural and undeveloped. North of Coon Creek, the A5C1, AAC2, D1, D13, and D13 South Modified Alternatives traverse identical land uses and parallel the D13 North Modified.

The closest residences are represented by NR2. The D1 alignment is considered equal or closer than noise receptors in the D13 North Modified alignment and hence considered worst case. As a result, the analysis and subsequent impacts/abatement measures, if any, are considered identical to those that were modeled in the noise analysis.

For specific details on the noise impact evaluation, please refer to the Noise Impact Report, available for review at the Department of Transportation, District 3, Sacramento Office, 2389 Gateway Oaks Dr., Sacramento, CA

#### 4.5.1 Long Term Noise Impacts

Table 4-6 shows the existing noise levels at the 31 receptors within the Study Area and the predicted noise levels, without sound walls, for each of the alignments. Noise levels were predicted for 2025. Bold numbers indicate approach or exceed Noise Abatement Criteria (NAC) at impacted receptors. Italic numbers indicate a "substantial increase" over existing levels.

**Table 4-6 Projected Traffic Noise Levels – Ultimate Plan 2025**

| Noise Level Location     | Existing Noise (Monitored) Leq dBA | A5C1 | AAC2 | D1   | D13  |
|--------------------------|------------------------------------|------|------|------|------|
| NR-1                     | 49.1                               | 60.6 | 60.5 | 56.8 | 56.8 |
| NR-2                     | 45.6                               | 60.6 | 62.6 | 57.3 | 57.3 |
| NR-3                     | 54                                 | 55.2 | 55.2 | 52.9 | 55.0 |
| NR-4                     | 45.6                               | 53.4 | 55.5 | 60.5 | 60.5 |
| NR-5                     | 51.3                               | 57.8 | 64.6 | 63.1 | 63.1 |
| NR-6                     | 49.6                               | 50.3 | 50.7 | 56.6 | 56.6 |
| NR-7                     | 38.1                               | 58.2 | 51.2 | 55.2 | 57.6 |
| NR-8                     | 48.1                               | 62.0 | 59.1 | N/A  | N/A  |
| NR-9                     | 36.4                               | 53.0 | 52.4 | N/A  | N/A  |
| NR-10a                   | 54.4                               | 64.3 | 63.6 | N/A  | N/A  |
| NR-10b                   | 52.7                               | 63.8 | 63.2 | N/A  | N/A  |
| NR-11                    | 36.6                               | N/A  | N/A  | 54.7 | 51.6 |
| NR-12                    | 46                                 | N/A  | N/A  | 60.5 | 56.2 |
| NR-13                    | 43.3                               | N/A  | N/A  | 68.2 | 57.9 |
| NR-14                    | 43.4                               | N/A  | 53.0 | 68.6 | 60.1 |
| NR-15                    | 45.6                               | 62.4 | 60.5 | N/A  | 53.1 |
| NR-16a                   | 47.7                               | 65.9 | 60.7 | N/A  | N/A  |
| NR-16b                   | 47.9                               | 66.2 | 60.1 | N/A  | N/A  |
| NR-17 <sup>4</sup> (8)   | 48.1                               | 59.6 | 61.3 | 58.6 | 58.1 |
| NR-18 <sup>4</sup> (10a) | 54.4                               | 70.4 | 70.0 | 65.7 | 69.5 |
| NR-19 <sup>4</sup> (10a) | 54.4                               | 66.6 | 65.9 | 73.7 | 68.0 |
| NR-20 <sup>4</sup> (14)  | 43.4                               | 70.4 | 70.3 | 59.1 | 63.2 |
| NR-21 <sup>4</sup> (15)  | 45.6                               | 73.9 | 69.6 | 57.0 | 55.6 |
| NR-22 <sup>4</sup> (16b) | 47.9                               | 72.5 | 66.4 | N/A  | N/A  |
| NR-23 <sup>4</sup> (10b) | 52.7                               | 72.2 | 65.2 | N/A  | N/A  |

| Noise Level Location    | Existing Noise (Monitored) Leq dBA | A5C1 | AAC2 | D1   | D13  |
|-------------------------|------------------------------------|------|------|------|------|
| NR-24 <sup>4</sup> (8)  | 48.1                               | 65.0 | 63.0 | N/A  | N/A  |
| NR-25 <sup>4</sup> (6)  | 49.6                               | 63.4 | 62.2 | N/A  | N/A  |
| NR-26 <sup>4</sup> (14) | 43.4                               | 70.4 | 70.3 | 59.1 | 63.2 |
| NR-27 <sup>4</sup> (14) | 43.4                               | N/A  | N/A  | 60.2 | 73.6 |
| NR-28 <sup>4</sup> (14) | 43.4                               | N/A  | N/A  | 59.7 | 65.9 |
| NR-29 <sup>4</sup> (14) | 43.4                               | 71.0 | 69.6 | 67.9 | 65.8 |
| NR-30 <sup>4</sup> (14) | 43.4                               | 70.7 | 68.7 | 69.1 | 67.8 |
| NR-31 <sup>4</sup> (15) | 45.6                               | 68.6 | 64.6 | N/A  | N/A  |

<sup>1</sup> N/A- The modeled segment does not contribute significantly to the noise level at the considered receptor location. Receptor location not modeled for the considered alignment.

<sup>2</sup> Italic numbers indicate “substantial increase” over existing levels.

<sup>3</sup> Bold numbers indicate noise levels that “approach or exceed” the NAC at impacted receptor.

<sup>4</sup> An “acoustical equivalent” was used as indicated in parenthesis.

**Table 4-7 Summary of Traffic Noise Modeling Results (A5C1)**

| Receiver ID | Location Description                                    | Type of Development | Noise Abatement Category Leq (h) | Existing Measured Noise Level dBA Leq (h) | Predicted <sup>4</sup> Worst Noise Hour Noise Level dBA Leq (h) | Noise Increase (+) or Decrease (-) | Impact Type <sup>5</sup> |
|-------------|---|---------------------|----------------------------------|---|---|------------------------------------|--------------------------|
| NR-1        | 4221 North Dowd Road                                    | Res.                | B <sup>1</sup>                   | 49.1                                      | 60.6 <sup>2 3</sup>   | +11.5                              | None                     |
| NR-2        | 100m north of Riosa Road                                | Res.                | B <sup>1</sup>                   | 45.6                                      | 60.6 <sup>3</sup>   | +15.0                              | S                        |
| NR-3        | 100 feet from Existing SR 65                            | Res.                | B <sup>1</sup>                   | 54  | 55.2 <sup>3</sup>   | +1.2                               | None                     |
| NR-4        | 4710 North Dowd Road                                    | Res.                | B <sup>1</sup>                   | 45.6                                      | 53.4 <sup>3</sup>   | +7.8                               | S                        |
| NR-5        | 4221 North Dowd Road                                    | Res.                | B <sup>1</sup>                   | 51.3                                      | 57.8 <sup>3</sup>   | +6.5                               | None                     |
| NR-6        | 700 feet from Existing SR 65                            | Res.                | B <sup>1</sup>                   | 49.6                                      | 50.3 <sup>3</sup>   | +0.7                               | None                     |
| NR-7        | 2780 Dowd Road  | Res.                | B <sup>1</sup>                   | 38.1                                      | 68.2 <sup>3</sup>   | +30.1                              | S, A/E                   |
| NR-8        | 2000 feet from Existing SR 65, 1000 feet from C1 and C2 | Res.                | B <sup>1</sup>                   | 48.1                                      | 62.0 <sup>3</sup>   | +13.9                              | S                        |
| NR-9        | 200m south of Wise Road                                 | Res.                | B <sup>1</sup>                   | 36.4                                      | 53.0 <sup>3</sup>   | +16.6                              | S                        |
| NR-10a      | Along Wise Road   | Res.                | B <sup>1</sup>                   | 54.4                                      | 64.3 <sup>3</sup>   | +9.9                               | None                     |
| NR-10b      | Along Wise Road   | Res.                | B <sup>1</sup>                   | 52.7                                      | 63.8 <sup>3</sup>   | +11.1                              | None                     |
| NR-11       | Along Airport Road                                      | Res.                | B <sup>1</sup>                   | 36.6                                      | N/A   | N/A                                | N/A                      |
| NR-12       | Along Nicolaus Road                                     | Res.                | B <sup>1</sup>                   | 46  | N/A   | N/A                                | N/A                      |
| NR-13       | On Rockwell Lane  | Res.                | B <sup>1</sup>                   | 43.3                                      | N/A   | N/A                                | N/A                      |
| NR-14       | Along Moore Road  | Res.                | B <sup>1</sup>                   | 43.4                                      | N/A   | N/A                                | S                        |
| NR-15       | 400 feet east of C1 and C2                              | Res.                | B <sup>1</sup>                   | 45.6                                      | 62.4 <sup>3</sup>   | +16.8                              | S                        |
| NR-16a      | North end of El Camino Verde                            | Res.                | B <sup>1</sup>                   | 47.7                                      | 65.9 <sup>3</sup>   | +18.2                              | S, A/E                   |
| NR-16b      | 1245 Cobblestone Dr                                     | Res.                | B <sup>1</sup>                   | 47.9                                      | 66.2 <sup>3</sup>   | +18.3                              | S, A/E                   |
| NR - 17     | 2000 feet from SR 65                                    | Res.                | B <sup>1</sup>                   | 48.1                                      | 59.6 <sup>3</sup>   | +11.5                              | S                        |
| NR-18       | Lincoln Crossing  | Res.                | B <sup>1</sup>                   | 54.4                                      | 70.4 <sup>3</sup>   | +16.0                              | S, A/E                   |
| NR-19       | Lincoln Crossing  | Comm/Res.           | C/B <sup>1</sup>                 | 54.4                                      | 66.6 <sup>3</sup>   | +12.2                              | S, A/E                   |
| NR-20       | Lincoln Crossing  | Res.                | B <sup>1</sup>                   | 43.4                                      | 70.4 <sup>3</sup>   | +27.0                              | S, A/E                   |



| Receiver ID | Location Description                                | Type of Development | Noise Abatement Category Leq (h) | Existing Measured Noise Level dBA Leq (h) | Predicted <sup>4</sup> Worst Noise Hour Noise Level dBA Leq (h) | Noise Increase (+) or Decrease (-) | Impact Type <sup>5</sup> |
|-------------|---|---------------------|----------------------------------|---|---|------------------------------------|--------------------------|
| NR-21       | 50 feet from Existing SR 65                         | Res.                | B <sup>1</sup>                   | 45.6                                      | 73.9 <sup>3</sup>   | +28.3                              | S, A/E                   |
| NR-22       | 50 feet from Existing SR 65, south of Nicolaus Road | Res.                | B <sup>1</sup>                   | 47.9                                      | 72.5 <sup>3</sup>   | +24.6                              | S, A/E                   |
| NR-23       | 50 feet south of Nicolaus Road                      | Res.                | B <sup>1</sup>                   | 52.7                                      | 72.2 <sup>3</sup>   | +19.5                              | S, A/E                   |
| NR-24       | 50 feet from C1                                     | Res.                | B <sup>1</sup>                   | 48.1                                      | 65.0 <sup>3</sup>   | +16.9                              | S                        |
| NR-25       | 50 feet from Existing SR 65                         | Res.                | B <sup>1</sup>                   | 49.6                                      | 63.4 <sup>3</sup>   | +13.8                              | S                        |
| NR-26       | NW corner of SR 65/Ferrari Ranch                    | Res.                | B <sup>1</sup>                   | 43.4                                      | 70.4 <sup>3</sup>   | 27.0                               | S, A/E                   |
| NR-27       | 100 feet North of D13                               | Res.                | B <sup>1</sup>                   | 43.4                                      | N/A   | N/A                                | N/A                      |
| NR-28       | 100 feet North of D13                               | Res.                | B <sup>1</sup>                   | 43.4                                      | N/A   | N/A                                | N/a                      |
| NR-31       | 3-D Development                                     | Res.                | B <sup>1</sup>                   | 43.4                                      | 71.0 <sup>3</sup>   | 27.6                               | S, A/E                   |
| NR-30       | 3-D Development                                     | Res.                | B <sup>1</sup>                   | 43.4                                      | 70.7 <sup>3</sup>   | +27.3                              | S, A/E                   |
| NR-31       | Lincoln West Development                            | Res.                | B <sup>1</sup>                   | 45.6                                      | 68.6 <sup>3</sup>   | +23.0                              | S, A/E                   |

<sup>1</sup> 67 dB <sup>2</sup> 72 dB <sup>3</sup> Modeled <sup>4</sup> Predicted for design year 2025 <sup>5</sup> Impact Types:

None - no impacts identified, A/E - noise abatement criteria approached or exceeded, S - existing noise level substantially increased, N/A - Not Applicable

**Table 4-8 Summary of Traffic Noise Modeling Results AAC2**

| Receiver ID | Location Description                                    | Type of Development | Noise Abatement Category Leq (h) | Existing Measured Noise Level dBA Leq (h) | Predicted <sup>4</sup> Worst Noise Hour Noise Level dBA Leq (h) | Noise Increase (+) or Decrease (-) | Impact Type <sup>6</sup> |
|-------------|---|---------------------|----------------------------------|---|---|------------------------------------|--------------------------|
| NR-1        | 6355 North SR 65  | Res.                | B <sup>1</sup>                   | 49.1                                      | 60.5 <sup>3</sup>   | +11.4                              | None                     |
| NR-2        | 100m north of Riosa Road                                | Res.                | B <sup>1</sup>                   | 45.6                                      | 62.6 <sup>3</sup>   | +17.0                              | S                        |
| NR-3        | 100 feet from Existing SR 65                            | Res.                | B <sup>1</sup>                   | 54  | 55.2 <sup>3</sup>   | +1.2                               | None                     |
| NR-4        | 4710 North Dowd Road                                    | Res.                | B <sup>1</sup>                   | 45.6                                      | 55.5 <sup>3</sup>   | +9.9                               | None                     |
| NR-5        | 4221 North Dowd Road                                    | Res.                | B <sup>1</sup>                   | 51.3                                      | 64.6 <sup>3</sup>   | +13.3                              | S                        |
| NR-6        | 700 feet from Existing SR 65                            | Res.                | B <sup>1</sup>                   | 49.6                                      | 50.7 <sup>3</sup>   | +1.1                               | None                     |
| NR-7        | 2780 Dowd Road  | Res.                | B <sup>1</sup>                   | 38.1                                      | 51.2 <sup>3</sup>   | +13.1                              | S                        |
| NR-8        | 2000 feet from Existing SR 65, 1000 feet from C1 and C2 | Res.                | B <sup>1</sup>                   | 48.1                                      | 59.1 <sup>3</sup>   | +11.0                              | None                     |
| NR-9        | 200m south of Wise Road                                 | Res.                | B <sup>1</sup>                   | 36.4                                      | 52.4 <sup>3</sup>   | +16.0                              | S                        |
| NR-10a      | Along Wise Road   | Res.                | B <sup>1</sup>                   | 54.4                                      | 63.6 <sup>3</sup>   | +9.2                               | None                     |
| NR-10b      | Along Wise Road   | Res.                | B <sup>1</sup>                   | 52.7                                      | 63.2 <sup>3</sup>   | +10.5                              | None                     |
| NR-11       | Along Airport Road                                      | Res.                | B <sup>1</sup>                   | 36.6                                      | N/A   | N/A                                | N/A                      |
| NR-12       | Along Nicolaus Road                                     | Res.                | B <sup>1</sup>                   | 46  | N/A   | N/A                                | N/A                      |
| NR-13       | On Rockwell Lane  | Res.                | B <sup>1</sup>                   | 43.3                                      | N/A   | N/A                                | N/A                      |
| NR-14       | Along Moore Road  | Res.                | B <sup>1</sup>                   | 43.4                                      | 53.0 <sup>3</sup>   | +9.6                               | None                     |
| NR-15       | 400 feet east of C1 and C2                              | Res.                | B <sup>1</sup>                   | 45.6                                      | 60.5 <sup>3</sup>   | +14.9                              | S                        |

| Receiver ID | Location Description                                | Type of Development | Noise Abatement Category Leq (h) | Existing Measured Noise Level dBA Leq (h) | Predicted <sup>4</sup> Worst Noise Hour Noise Level dBA Leq (h) | Noise Increase (+) or Decrease (-) | Impact Type <sup>6</sup> |
|-------------|---|---------------------|----------------------------------|---|---|------------------------------------|--------------------------|
| NR-16a      | North end of El Camino Verde                        | Res.                | B <sup>1</sup>                   | 47.7                                      | 60.7 <sup>3</sup>   | +13.0                              | S                        |
| NR-16b      | 1245 Cobblestone Dr                                 | Res.                | B <sup>1</sup>                   | 47.9                                      | 60.1 <sup>3</sup>   | +12.2                              | S                        |
| NR-17       | 2000 feet from SR 65                                | Res.                | B <sup>1</sup>                   | 48.1                                      | 61.3 <sup>3</sup>   | +13.2                              | S                        |
| NR-18       | Lincoln Crossing                                    | Res.                | B <sup>1</sup>                   | 54.4                                      | 70.0 <sup>3</sup>   | +15.6                              | S, A/E                   |
| NR-19       | Lincoln Crossing                                    | Comm/Res.           | C/B <sup>1</sup>                 | 54.4                                      | 65.9 <sup>3</sup>   | +11.5                              | S, A/E                   |
| NR-20       | Lincoln Crossing                                    | Res.                | B <sup>1</sup>                   | 43.4                                      | 70.3 <sup>3</sup>   | +26.9                              | S, A/E                   |
| NR-21       | 50 feet from Existing SR 65                         | Res.                | B <sup>1</sup>                   | 45.6                                      | 69.6 <sup>3</sup>   | +24.0                              | S, A/E                   |
| NR-22       | 50 feet from Existing SR 65, south of Nicolaus Road | Res.                | B <sup>1</sup>                   | 47.9                                      | 66.4 <sup>3</sup>   | +18.5                              | S, A/E                   |
| NR-23       | 50 feet south of Nicolaus Road                      | Res.                | B <sup>1</sup>                   | 52.7                                      | 65.2 <sup>3</sup>   | +12.5                              | S                        |
| NR-24       | 50 feet from C1                                     | Res.                | B <sup>1</sup>                   | 48.1                                      | 63.0 <sup>3</sup>   | +14.9                              | S                        |
| NR-25       | 50 feet from Existing SR 65                         | Res.                | B <sup>1</sup>                   | 49.6                                      | 62.2 <sup>3</sup>   | +12.6                              | S                        |
| NR-26       | NW corner of SR 65/Ferrari Ranch                    | Res.                | B <sup>1</sup>                   | 43.4                                      | 70.3 <sup>3</sup>   | 26.9                               | S, A/E                   |
| NR-27       | 100 feet North of D13                               | Res.                | B <sup>1</sup>                   | 43.4                                      | N/A   | N/A                                | N/A                      |
| NR-28       | 100 feet North of D13                               | Res.                | B <sup>1</sup>                   | 43.4                                      | N/A   | N/A                                | N/A                      |
| NR-29       | 3-D Development                                     | Res.                | B <sup>1</sup>                   | 43.4                                      | 69.6 <sup>5</sup>   | +26.2                              | S, A/E                   |
| NR-30       | 3-D Development                                     | Res.                | B <sup>1</sup>                   | 43.4                                      | 68.7 <sup>5</sup>   | +25.3                              | S, A/E                   |
| NR-31       | Lincoln West Development                            | Res.                | B <sup>1</sup>                   | 45.6                                      | 64.6 <sup>5</sup>   | +19.0                              | S                        |

<sup>1</sup> 67 dB <sup>2</sup> 72 dB <sup>3</sup> Modeled <sup>4</sup> Predicted for design year 2025 <sup>5</sup> Measured

<sup>6</sup> Impact Types: None - no impacts identified, A/E - noise abatement criteria approached or exceeded, S - existing noise level substantially increased, N/A- Not Applicable

**Table 4-9 Summary of Traffic Noise Modeling Results D1**

| Receiver ID | Location Description                                    | Type of Development | Noise Abatement Category Leq (h) | Existing Measured Noise Level dBA Leq (h) | Predicted <sup>4</sup> Worst Noise Hour Noise Level dBA Leq (h) | Noise Increase (+) or Decrease (-) | Impact Type <sup>5</sup> |
|-------------|---|---------------------|----------------------------------|---|---|------------------------------------|--------------------------|
| NR-1        | 6355 North SR 65  | Res.                | B <sup>1</sup>                   | 49.1                                      | 56.8 <sup>3</sup>   | +7.7                               | None                     |
| NR-2        | 100m north of Riosa Road                                | Res.                | B <sup>1</sup>                   | 45.6                                      | 57.3 <sup>3</sup>   | +11.7                              | None                     |
| NR-3        | 100 feet from Existing SR 65                            | Res.                | B <sup>1</sup>                   | 54  | 52.9 <sup>3</sup>   | 0                                  | None                     |
| NR-4        | 4710 North Dowd Road                                    | Res.                | B <sup>1</sup>                   | 45.6                                      | 60.5 <sup>3</sup>   | +14.9                              | S                        |
| NR-5        | 4221 North Dowd Road                                    | Res.                | B <sup>1</sup>                   | 51.3                                      | 63.1 <sup>3</sup>   | +11.8                              | None                     |
| NR-6        | 700 feet from Existing SR 65                            | Res.                | B <sup>1</sup>                   | 49.6                                      | 56.6 <sup>3</sup>   | +7                                 | None                     |
| NR-7        | 2780 Dowd Road  | Res.                | B <sup>1</sup>                   | 38.1                                      | 55.2 <sup>3</sup>   | +17.1                              | S                        |
| NR-8        | 2000 feet from Existing SR 65, 1000 feet from C1 and C2 | Res.                | B <sup>1</sup>                   | 48.1                                      | N/A   | N/A                                | N/A                      |
| NR-9        | 200m south of Wise Road                                 | Res.                | B <sup>1</sup>                   | 36.4                                      | N/A   | N/A                                | N/A                      |
| NR-10a      | Along Wise Road   | Res.                | B <sup>1</sup>                   | 54.4                                      | N/A   | N/A                                | N/A                      |
| NR-10b      | Along Wise Road   | Res.                | B <sup>1</sup>                   | 52.7                                      | N/A   | N/A                                | N/A                      |

| Receiver ID | Location Description                                | Type of Development | Noise Abatement Category Leq (h) | Existing Measured Noise Level dBA Leq (h) | Predicted <sup>4</sup> Worst Noise Hour Noise Level dBA Leq (h) | Noise Increase (+) or Decrease (-) | Impact Type <sup>5</sup> |
|-------------|---|---------------------|----------------------------------|---|---|------------------------------------|--------------------------|
| NR-11       | Along Airport Road                                  | Res.                | B <sup>1</sup>                   | 36.6                                      | 54.7 <sup>3</sup>   | +18.1                              | S                        |
| NR-12       | Along Nicolaus Road                                 | Res.                | B <sup>1</sup>                   | 46  | 60.5 <sup>3</sup>   | +14.5                              | S                        |
| NR-13       | On Rockwell Lane                                    | Res.                | B <sup>1</sup>                   | 43.3                                      | 68.2 <sup>3</sup>   | +24.9                              | S, A/E                   |
| NR-14       | Along Moore Road                                    | Res.                | B <sup>1</sup>                   | 43.4                                      | 68.6 <sup>3</sup>   | +25.2                              | S, A/E                   |
| NR-15       | 400 feet east of C1 and C2                          | Res.                | B <sup>1</sup>                   | 45.6                                      | N/A   | N/A                                | N/A                      |
| NR-16a      | North end of El Camino Verde                        | Res.                | B <sup>1</sup>                   | 47.7                                      | N/A   | N/A                                | N/A                      |
| NR-16b      | 1245 Cobblestone Dr                                 | Res.                | B <sup>1</sup>                   | 47.9                                      | N/A   | N/A                                | N/A                      |
| NR-17       | 2000 feet from SR 65                                | Res.                | B <sup>1</sup>                   | 48.1                                      | 58.6 <sup>3</sup>   | +10.5                              | None                     |
| NR-18       | Lincoln Crossing                                    | Res.                | B <sup>1</sup>                   | 54.4                                      | 65.7 <sup>3</sup>   | +11.3                              | S, A/E                   |
| NR-19       | Lincoln Crossing                                    | Comm/Res.           | C/B1                             | 54.4                                      | 73.7 <sup>3</sup>   | +19.3                              | S, A/E                   |
| NR-20       | Lincoln Crossing                                    | Res.                | B <sup>1</sup>                   | 43.4                                      | 59.1 <sup>3</sup>   | +15.7                              | S                        |
| NR-21       | 50 feet from Existing SR 65                         | Res.                | B <sup>1</sup>                   | 45.6                                      | 57.0 <sup>3</sup>   | +11.4                              | S                        |
| NR-22       | 50 feet from Existing SR 65, south of Nicolaus Road | Res.                | B <sup>1</sup>                   | 47.9                                      | N/A   | N/A                                | N/A                      |
| NR-23       | 50 feet south of Nicolaus Road                      | Res.                | B <sup>1</sup>                   | 52.7                                      | N/A   | N/A                                | N/A                      |
| NR-24       | 50 feet from C1                                     | Res.                | B <sup>1</sup>                   | 48.1                                      | N/A   | N/A                                | N/A                      |
| NR-25       | 50 feet from Existing SR 65                         | Res.                | B <sup>1</sup>                   | 49.6                                      | N/A   | N/A                                | N/A                      |
| NR-26       | NW corner of SR 65/ Ferrari Ranch                   | Res.                | B <sup>1</sup>                   | 43.4                                      | 59.1 <sup>3</sup>   | 15.7                               | S                        |
| NR-27       | 100 feet North of D13                               | Res.                | B <sup>1</sup>                   | 43.4                                      | 60.2 <sup>3</sup>   | +16.8                              | S                        |
| NR-28       | 100 feet North of D13                               | Res.                | B <sup>1</sup>                   | 43.4                                      | 59.7 <sup>3</sup>   | +16.3                              | S                        |
| NR-29       | 3-D Development                                     | Res.                | B <sup>1</sup>                   | 43.4                                      | 67.9 <sup>3</sup>   | +24.5                              | S, A/E                   |
| NR-30       | 3-D Development                                     | Res.                | B <sup>1</sup>                   | 43.4                                      | 69.1 <sup>3</sup>   | +25.7                              | S, A/E                   |
| NR-31       | Lincoln West Development                            | Res.                | B <sup>1</sup>                   | 45.6                                      | N/A   | N/A                                | N/A                      |

<sup>1</sup> 67 dB <sup>2</sup> 72 dB <sup>3</sup> Modeled <sup>4</sup> Predicted for design year 2025 <sup>5</sup> Impact Types:

None - no impacts identified, A/E - noise abatement criteria approached or exceeded, S - existing noise level substantially increased, N/A- Not Applicable

**Table 4-10 Summary of Traffic Noise Modeling Results D13**

| Receiver ID | Location Description         | Type of Development | Noise Abatement Category Leq (h) | Existing Noise Level dBA Leq (h) | Predicted <sup>4</sup> Worst Noise Hour Noise Level dBA Leq (h) | Noise Increase (+) or Decrease (-) | Impact Type <sup>5</sup> |
|-------------|------------------------------|---------------------|----------------------------------|----------------------------------|---|------------------------------------|--------------------------|
| NR-1        | 6355 North SR 65             | Res.                | B <sup>1</sup>                   | 49.1                             | 56.8 <sup>3</sup>   | +7.7                               | None                     |
| NR-2        | 100m north of Riosa Road     | Res.                | B <sup>1</sup>                   | 45.6                             | 57.3 <sup>3</sup>   | +11.7                              | None                     |
| NR-3        | 100 feet from Existing SR 65 | Res.                | B <sup>1</sup>                   | 54                               | 55.0 <sup>3</sup>   | +1.0                               | None                     |
| NR-4        | 4710 North Dowd Road         | Res.                | B <sup>1</sup>                   | 45.6                             | 60.5 <sup>3</sup>   | +14.9                              | S                        |
| NR-5        | 4221 North Dowd Road         | Res.                | B <sup>1</sup>                   | 51.3                             | 63.1 <sup>3</sup>   | +11.8                              | None                     |
| NR-6        | 700 feet from Existing SR 65 | Res.                | B <sup>1</sup>                   | 49.6                             | 56.6 <sup>3</sup>   | +7.0                               | None                     |
| NR-7        | 2780 Dowd Road               | Res.                | B <sup>1</sup>                   | 38.1                             | 57.6 <sup>3</sup>   | +19.5                              | S                        |

| Receiver ID | Location Description                                    | Type of Development | Noise Abatement Category Leq (h) | Existing Noise Level dBA Leq (h) | Predicted <sup>4</sup> Worst Noise Hour Noise Level dBA Leq (h) | Noise Increase (+) or Decrease (-) | Impact Type <sup>5</sup> |
|-------------|---|---------------------|----------------------------------|----------------------------------|---|------------------------------------|--------------------------|
| NR-8        | 2000 feet from Existing SR 65, 1000 feet from C1 and C2 | Res.                | B <sup>1</sup>                   | 48.1                             | N/A   | N/A                                | N/A                      |
| NR-9        | 200m south of Wise Road                                 | Res.                | B <sup>1</sup>                   | 36.4                             | N/A   | N/A                                | N/A                      |
| NR-10a      | Along Wise Road   | Res.                | B <sup>1</sup>                   | 54.4                             | N/A   | N/A                                | N/A                      |
| NR-10b      | Along Wise Road   | Res.                | B <sup>1</sup>                   | 52.7                             | N/A   | N/A                                | N/A                      |
| NR-11       | Along Airport Road                                      | Res.                | B <sup>1</sup>                   | 36.6                             | 51.6 <sup>3</sup>   | +15                                | S                        |
| NR-12       | Along Nicolaus Road                                     | Res.                | B <sup>1</sup>                   | 46                               | 56.2 <sup>3</sup>   | +10.2                              | None                     |
| NR-13       | On Rockwell Lane  | Res.                | B <sup>1</sup>                   | 43.3                             | 57.9 <sup>3</sup>   | +14.6                              | S                        |
| NR-14       | Along Moore Road  | Res.                | B <sup>1</sup>                   | 43.4                             | 60.1 <sup>3</sup>   | +16.7                              | S                        |
| NR-15       | 400 feet east of C1 and C2                              | Res.                | B <sup>1</sup>                   | 45.6                             | 53.1 <sup>3</sup>   | +7.5                               | None                     |
| NR-16a      | North end of El Camino Verde                            | Res.                | B <sup>1</sup>                   | 47.7                             | N/A   | N/A                                | N/A                      |
| NR-16b      | 1245 Cobblestone Dr                                     | Res.                | B <sup>1</sup>                   | 47.9                             | N/A   | N/A                                | N/A                      |
| NR-17       | 2000 feet from SR 65                                    | Res.                | B <sup>1</sup>                   | 48.1                             | 58.1 <sup>3</sup>   | +10                                | None                     |
| NR-18       | Lincoln Crossing  | Res.                | B <sup>1</sup>                   | 54.4                             | 69.5 <sup>3</sup>   | +15.1                              | S, A/E                   |
| NR-19       | Lincoln Crossing  | Comm./Res.          | C/B <sup>1</sup>                 | 54.4                             | 68.0 <sup>3</sup>   | +13.6                              | S, A/E                   |
| NR-20       | Lincoln Crossing  | Res.                | B <sup>1</sup>                   | 43.4                             | 63.2 <sup>3</sup>   | +19.8                              | S                        |
| NR-21       | 50 feet from Existing SR 65                             | Res.                | B <sup>1</sup>                   | 45.6                             | 55.6 <sup>3</sup>   | +10                                | None                     |
| NR-22       | 50 feet from Existing SR 65, south of Nicolaus Road     | Res.                | B <sup>1</sup>                   | 47.9                             | N/A   | N/A                                | N/A                      |
| NR-23       | 50 feet south of Nicolaus Road                          | Res.                | B <sup>1</sup>                   | 52.7                             | N/A   | N/A                                | N/A                      |
| NR-24       | 50 feet from C1 Alignment                               | Res.                | B <sup>1</sup>                   | 48.1                             | N/A   | N/A                                | N/A                      |
| NR-25       | 50 feet from Existing SR 65                             | Res.                | B <sup>1</sup>                   | 49.6                             | N/A   | N/A                                | N/A                      |
| NR-26       | NW corner of SR 65/Ferrari Ranch                        | Res.                | C <sup>2</sup>                   | 43.4                             | 63.2 <sup>3</sup>   | 19.8                               | S                        |
| NR-27       | 100 feet North of D13 Alignment                         | Res.                | B <sup>1</sup>                   | 43.4                             | 73.6 <sup>3</sup>   | +30.2                              | S, A/E                   |
| NR-28       | 100 feet North of D13                                   | Res.                | B <sup>1</sup>                   | 43.4                             | 65.9 <sup>3</sup>   | +22.5                              | S, A/E                   |
| NR-29       | 3-D Development   | Res.                | B <sup>1</sup>                   | 43.4                             | 65.8 <sup>3</sup>   | +22.4                              | S, A/E                   |
| NR-30       | 3-D Development   | Res.                | B <sup>1</sup>                   | 43.4                             | 67.8 <sup>3</sup>   | +24.4                              | S, A/E                   |
| NR-31       | Lincoln West Development                                | Res.                | B <sup>1</sup>                   | 45.6                             | N/A   | N/A                                | N/A                      |

<sup>1</sup> 67 dB <sup>2</sup> 72 dB <sup>3</sup> Modeled <sup>4</sup> Predicted for design year 2025

<sup>5</sup> Impact Types: None - no impacts identified, A/E - noise abatement criteria approached or exceeded, S - existing noise level substantially increased, N/A- Not Applicable

#### 4.5.2 Noise Abatement Measures

##### Long Term noise impact abatement measures (NEPA)

Under Federal/FHWA regulations (23 CFR 772) and the Department's policy, noise abatement must be considered when the project results in a noise impact. Feasible and reasonable abatement measures must be included in the final environmental

documentation. Receptor locations that are predicted to be noise impacted are summarized in Table 4-7 through Table 4-10.

According to the Caltrans Noise Protocol, a minimum of 5 dB of noise reduction must be achieved at impacted receivers for proposed noise abatement to be considered feasible. Other factors may also restrict feasibility, including topography, access requirements for driveways or ramps, presence of local cross streets, other noise sources in the area, and safety considerations.

For any soundwalls to be considered reasonable from a cost perspective, the total estimated cost of the wall must be at or below the total allowance calculated for each wall. The reasonable base cost allowance per benefited residence is \$17,000. The cost calculations of the soundwall should include all items appropriate and necessary for the construction of the soundwall, such as traffic control, drainage, and retaining walls. Soundwalls were not considered at isolated rural residences on large lots because they did not meet the Caltrans/FHWA reasonableness criteria. Soundwalls for rural and single family residences would not be reasonable from a cost perspective because the cost of the soundwall per residence is too high. No further evaluation was made at these locations. Noise abatement is not considered reasonable at commercial use sites, as soundwalls are generally not desired for these land use types. A final decision on sound walls, including the specific locations and heights, will be made by the Project Development Team (PDT) after final design has been completed, and local government and public input has been made. Table 4-11 through Table 4-14 discuss the soundwalls evaluated as noise abatement, including cost effectiveness.

**Table 4-11 Soundwalls Evaluated for Abatement Alternative A5C1**

| Sound Wall | Recvr(s) Protected | SW Height     | Length (ft)       | SW Location Description                             | Total Reasonable Allowance | Engineers estimate |
|------------|--------------------|---------------|-------------------|---|----------------------------|--------------------|
| C1.1       | 19 (Comm.)         | 3.0 m (10 ft) | 671 m (2,200 ft)  | N/B SR65 to Ferrari Ranch Off-Ramp 163+00 to 185+00 | NR                         | NR                 |
|            |                    | 3.6 m (12 ft) | 671 m (2,200 ft)  | N/B SR65 to Ferrari Ranch Off-Ramp 163+00 to 185+00 | NR                         | NR                 |
|            |                    | 4.3 m (14 ft) | 671 m (2,200 ft)  | N/B SR65 to Ferrari Ranch Off-Ramp 163+00 to 185+00 | NR                         | NR                 |
|            |                    | 4.6 m (16 ft) | 671 m (2,200 ft)  | N/B SR65 to Ferrari Ranch Off-Ramp 163+00 to 185+00 | NR                         | NR                 |
| C1.2       | 20,29 (3-D Dev.)   | 3.0 m (10 ft) | 1859 m (6,100 ft) | W/B Ferrari Ranch to N/B SR65 185+00 to 246+00      | NF                         | NF                 |
|            |                    | 3.6 m (12 ft) | 1859 m (6,100 ft) | W/B Ferrari Ranch to N/B SR65 185+00 to 246+00      | NF                         | NF                 |
|            |                    | 4.3 m (14 ft) | 1859 m (6,100 ft) | W/B Ferrari Ranch to N/B SR65 185+00 to 246+00      | \$1,591,000                | \$1,843,300        |

| Sound Wall         | Recvr(s) Protected        | SW Height     | Length (ft)        | SW Location Description                        | Total Reasonable Allowance | Engineers estimate |
|--------------------|---------------------------|---------------|--------------------|--|----------------------------|--------------------|
|                    |                           | 4.6 m (16 ft) | 1859 m (6,100 ft)  | W/B Ferrari Ranch to N/B SR65 185+00 to 246+00 | \$1,677,000                | \$2,764,900        |
| C1.3               | 30<br>(3-D Dev.)          | 3.0 m (10 ft) | 853 m (2,800 ft)   | S/B SR65 246+00 to 218+00                      | \$1,560,000                | \$604,400          |
|                    |                           | 3.6 m (12 ft) | 853 m (2,800 ft)   | S/B SR65 246+00 to 218+00                      | \$1,560,000                | \$725,200          |
|                    |                           | 4.3 m (14 ft) | 853 m (2,800 ft)   | S/B SR65 246+00 to 218+00                      | \$1,640,000                | \$846,100          |
|                    |                           | 4.6 m (16 ft) | 853 m (2,800 ft)   | S/B SR65 246+00 to 218+00                      | \$1,640,000                | \$1,269,100        |
| C1.4               | 18                        | 3.0 m (10 ft) | 671 m (2,200 ft)   | E/B Ferrari Ranch to S/B SR65 185+00 to 163+00 | \$2,220,000                | \$474,900          |
|                    |                           | 3.6 m (12 ft) | 671 m (2,200 ft)   | E/B Ferrari Ranch to S/B SR65 185+00 to 163+00 | \$2,340,000                | \$569,800          |
|                    |                           | 4.3 m (14 ft) | 671 m (2,200 ft)   | E/B Ferrari Ranch to S/B SR65 185+00 to 163+00 | \$2,340,000                | \$664,800          |
|                    |                           | 4.6 m (16 ft) | 671 m (2,200 ft)   | E/B Ferrari Ranch to S/B SR65 185+00 to 163+00 | \$2,340,000                | \$997,200          |
| C1.5               | 15,21                     | 3.0 m (10 ft) | 1097 m (3,600 ft)  | N/B SR65 253+00 to 289+00                      | NF                         | NF                 |
|                    |                           | 3.6 m (12 ft) | 1097 m (3,600 ft)  | N/B SR65 253+00 to 289+00                      | \$2,769,000                | \$932,400          |
|                    |                           | 4.3 m (14 ft) | 1097 m (3,600 ft)  | N/B SR65 253+00 to 289+00                      | \$2,769,000                | \$1,087,800        |
|                    |                           | 4.6 m (16 ft) | 1097 m (3,600 ft)  | N/B SR65 253+00 to 289+00                      | \$2,911,000                | \$1,631,700        |
| C1.6               | 16a,<br>16b               | 3.0 m (10 ft) | 1707 m (5,600 ft)  | S/B SR65 to Nicolaus Off-Ramp 356+00 to 300+00 | NF                         | NF                 |
|                    |                           | 3.6 m (12 ft) | 1707 m (5,600 ft)  | S/B SR65 to Nicolaus Off-Ramp 356+00 to 300+00 | NF                         | NF                 |
|                    |                           | 4.3 m (14 ft) | 1707 m (5,600 ft)  | S/B SR65 to Nicolaus Off-Ramp 356+00 to 300+00 | \$1,184,000                | \$1,692,200        |
|                    |                           | 4.6 m (16 ft) | 1707 m (5,600 ft)  | S/B SR65 to Nicolaus Off-Ramp 356+00 to 300+00 | \$1,184,000                | \$2,538,200        |
| C1.7a <sup>1</sup> | 22,23                     | 3.0 m (10 ft) | 396 m (1,300 ft)   | Nicolaus to S/B SR65 300+00 to 287+00          | NF                         | NF                 |
|                    |                           | 3.6 m (12 ft) | 396 m (1,300 ft)   | Nicolaus to S/B SR65 300+00 to 287+00          | NF                         | NF                 |
|                    |                           | 4.3 m (14 ft) | 396 m (1,300 ft)   | Nicolaus to S/B SR65 300+00 to 287+00          | \$962,000                  | \$392,900          |
|                    |                           | 4.6 m (16 ft) | 396 m (1,300 ft)   | Nicolaus to S/B SR65 300+00 to 287+00          | \$962,000                  | \$589,300          |
| C1.7b <sup>1</sup> | 31<br>(Lincoln West Dev.) | 3.0 m (10 ft) | 518 m (1,700 ft)   | S/B SR65 275+00 to 258+00                      | \$1,155,000                | \$367,000          |
|                    |                           | 3.6 m (12 ft) | 518 m (1,700 ft)   | S/B SR65 275+00 to 258+00                      | \$1,155,000                | \$440,300          |
|                    |                           | 4.3 m (14 ft) | 518 m (1,700 ft)   | S/B SR65 275+00 to 258+00                      | \$1,221,000                | \$513,700          |
|                    |                           | 4.6 m (16 ft) | 518 m (1,700 ft)   | S/B SR65 275+00 to 258+00                      | \$1,221,000                | \$770,600          |
| C1.13              | 10a                       | 3.0 m (10 ft) | 304.8 m (1,000 ft) | E/B Wise Road                                  | NF                         | NF                 |
|                    |                           | 3.6 m (12 ft) | 304.8 m (1,000 ft) | E/B Wise Road                                  | \$66,000                   | \$259,000          |
|                    |                           | 4.3 m (14 ft) | 304.8 m (1,000 ft) | E/B Wise Road                                  | \$66,000                   | \$302,200          |
|                    |                           | 4.6 m (16 ft) | 304.8 m (1,000 ft) | E/B Wise Road                                  | \$66,000                   | \$453,300          |
| C1.14              | 10b                       | 3.0 m (10 ft) |                    |  | NF                         | NF                 |
|                    |                           | 3.6 m (12 ft) |                    |  | NF                         | NF                 |
|                    |                           | 4.3 m (14 ft) |                    |  | NF                         | NF                 |
|                    |                           | 4.6 m (16 ft) |                    |  | NF                         | NF                 |



| Sound Wall | Recvr(s) Protected | SW Height     | Length (ft)        | SW Location Description              | Total Reasonable Allowance | Engineers estimate |
|------------|--------------------|---------------|--------------------|--------------------------------------|----------------------------|--------------------|
| C1.11      | 7                  | 3.0 m (10 ft) |                    |                                      | NF                         | NF                 |
|            |                    | 3.6 m (12 ft) |                    |                                      | NF                         | NF                 |
|            |                    | 4.3 m (14 ft) |                    |                                      | NF                         | NF                 |
| C1.12      | 8                  | 3.0 m (10 ft) |                    |                                      | NF                         | NF                 |
|            |                    | 3.6 m (12 ft) |                    |                                      | NF                         | NF                 |
|            |                    | 4.3 m (14 ft) |                    |                                      | NF                         | NF                 |
|            |                    | 4.6 m (16 ft) |                    |                                      | NF                         | NF                 |
| C1.10      | 4,5                | 3.0 m (10 ft) | 3444 m (11,300 ft) | N/B SR 65 532+00 to 645+00           | \$99,000                   | \$111,000          |
|            |                    | 3.6 m (12 ft) | 3444 m (11,300 ft) | N/B SR 65 532+00 to 645+00           | \$99,000                   | \$2,926,700        |
|            |                    | 4.3 m (14 ft) | 3444 m (11,300 ft) | N/B SR 65 532+00 to 645+00           | \$105,000                  | \$3,414,500        |
|            |                    | 4.6 m (16 ft) | 3444 m (11,300 ft) | N/B SR 65 532+00 to 645+00           | \$105,000                  | \$5,121,800        |
| C1.8       | 1                  | 3.0 m (10 ft) |                    |                                      | NF                         | NF                 |
|            |                    | 3.6 m (12 ft) |                    |                                      | NF                         | NF                 |
|            |                    | 4.3 m (14 ft) |                    |                                      | NF                         | NF                 |
|            |                    | 4.6 m (16 ft) |                    |                                      | NF                         | NF                 |
| C1.9       | 2                  | 3.0 m (10 ft) | 427 m (1,400 ft)   | W/B Riosa N/B SR 65 532+00 to 645+00 | NF                         | NF                 |
|            |                    | 3.6 m (12 ft) | 304.8 m (1,000 ft) | W/B Riosa N/B SR 65 532+00 to 645+00 | NF                         | NF                 |
|            |                    | 4.3 m (14 ft) | 304.8 m (1,000 ft) | W/B Riosa N/B SR 65 532+00 to 645+00 | NF                         | NF                 |
|            |                    | 4.6 m (16 ft) | 304.8 m (1,000 ft) | W/B Riosa N/B SR 65 532+00 to 645+00 | NF                         | NF                 |

City of Lincoln sewage facility left unshielded

NF Not Feasible, NR No Receptors

**Table 4-12 Soundwalls Evaluated for Abatement Alternative AAC2**

| Sound Wall        | Recvr(s) Protected | SW Height     | Length (ft)       | SW Location Description                              | Total Reasonable Allowance | Engineers estimate |
|-------------------|--------------------|---------------|-------------------|--|----------------------------|--------------------|
| C2.1              | 19 (Comm.)         | 3.0 m (10 ft) | 671 m (2,200 ft)  | N/B SR 65 to Ferrari Ranch Off-Ramp 165+00 to 187+00 | NR                         | NR                 |
|                   |                    | 3.6 m (12 ft) | 671 m (2,200 ft)  | N/B SR 65 to Ferrari Ranch Off-Ramp 165+00 to 187+00 | NR                         | NR                 |
|                   |                    | 4.3 m (14 ft) | 671 m (2,200 ft)  | N/B SR 65 to Ferrari Ranch Off-Ramp 165+00 to 187+00 | NR                         | NR                 |
|                   |                    | 4.6 m (16 ft) | 671 m (2,200 ft)  | N/B SR 65 to Ferrari Ranch Off-Ramp 165+00 to 187+00 | NR                         | NR                 |
| C2.2              | 20, 29 (3-D Dev.)  | 3.0 m (10 ft) | 1859 m (6,100 ft) | W/B Ferrari Ranch to N/B SR 65 187+00 to 248+00      | NF                         | NF                 |
|                   |                    | 3.6 m (12 ft) | 1859 m (6,100 ft) | W/B Ferrari Ranch to N/B SR 65 187+00 to 248+00      | \$1,591,000                | \$1,579,900        |
|                   |                    | 4.3 m (14 ft) | 1859 m (6,100 ft) | W/B Ferrari Ranch to N/B SR 65 187+00 to 248+00      | \$1,591,000                | \$1,843,300        |
|                   |                    | 4.6 m (16 ft) | 1859 m (6,100 ft) | W/B Ferrari Ranch to N/B SR 65 187+00 to 248+00      | \$1,591,000                | \$2,764,900        |
| C2.3 <sup>1</sup> | 30 (3-D Dev)       | 3.0 m (10 ft) | 975 m (3,200 ft)  | S/B SR 65 248+00 to 216+00                           | \$1,400,000                | \$690,700          |

| Sound Wall                      | Recvr(s) Protected             | SW Height     | Length (ft)        | SW Location Description                               | Total Reasonable Allowance | Engineers estimate |
|---------------------------------|--------------------------------|---------------|--------------------|---|----------------------------|--------------------|
|                                 |                                | 3.6 m (12 ft) | 975 m (3,200 ft)   | S/B SR 65 248+00 to 216+00                            | \$1,480,000                | \$828,800          |
|                                 |                                | 4.3 m (14 ft) | 975 m (3,200 ft)   | S/B SR 65 248+00 to 216+00                            | \$1,480,000                | \$967,000          |
|                                 |                                | 4.6 m (16 ft) | 975 m (3,200 ft)   | S/B SR 65 248+00 to 216+00                            | \$1,560,000                | \$1,450,400        |
| C2.4                            | 18                             | 3.0 m (10 ft) | 671 m (2,200 ft)   | E/B SR 65 Ferrari Ranch to S/B SR 65 187+00 to 165+00 | \$2,220,000                | \$474,900          |
|                                 |                                | 3.6 m (12 ft) | 671 m (2,200 ft)   | E/B SR 65 Ferrari Ranch to S/B SR 65 187+00 to 165+00 | \$2,220,000                | \$569,800          |
|                                 |                                | 4.3 m (14 ft) | 671 m (2,200 ft)   | E/B SR 65 Ferrari Ranch to S/B SR 65 187+00 to 165+00 | \$2,340,000                | \$664,800          |
|                                 |                                | 4.6 m (16 ft) | 671 m (2,200 ft)   | E/B SR 65 Ferrari Ranch to S/B SR 65 187+00 to 165+00 | \$2,340,000                | \$997,200          |
| C2.5                            | 15,21                          | 3.0 m (10 ft) | 1402 m (4,600 ft)  | N/B SR 65 to Nicolaus Off-Ramp 257+00 to 303+00       | NF                         | NF                 |
|                                 |                                | 3.6 m (12 ft) | 1402 m (4,600 ft)  | N/B SR 65 to Nicolaus Off-Ramp 257+00 to 303+00       | NF                         | NF                 |
|                                 |                                | 4.3 m (14 ft) | 1402 m (4,600 ft)  | N/B SR 65 to Nicolaus Off-Ramp 257+00 to 303+00       | \$2,145,000                | \$1,390,000        |
|                                 |                                | 4.6 m (16 ft) | 1402 m (4,600 ft)  | N/B SR 65 to Nicolaus Off-Ramp 257+00 to 303+00       | \$2,145,000                | \$2,085,000        |
| C2.6nb                          | 25                             | 3.0 m (10 ft) |                    |   | NF                         | NF                 |
|                                 |                                | 3.6 m (12 ft) |                    |   | NF                         | NF                 |
|                                 |                                | 4.3 m (14 ft) |                    |   | NF                         | NF                 |
|                                 |                                | 4.6 m (16 ft) |                    |   | NF                         | NF                 |
| C2.6sb <sup>2</sup>             | 16a                            | 3.0 m (10 ft) | 1494 m (4,900 ft)  | S/B SR 65 Venture to Nicolaus OR 303+00 to 352+00     | NF                         | NF                 |
|                                 |                                | 3.6 m (12ft)  | 1494 m (4,900 ft)  | S/B SR 65 Venture to Nicolaus OR 303+00 to 352+00     | NF                         | NF                 |
|                                 |                                | 4.3 m (14 ft) | 1494 m (4,900 ft)  | S/B SR 65 Venture to Nicolaus OR 303+00 to 352+00     | NF                         | NF                 |
|                                 |                                | 4.6 m (16 ft) | 1494 m (4,900 ft)  | S/B SR 65 Venture to Nicolaus OR 303+00 to 352+00     | \$1,050,000                | \$2,221,000        |
| C2.6sb <sup>3</sup><br>(altern) | 16a                            | 3.0 m (10 ft) | 610 m (2,000 ft)   | S/B SR 65 335+00 to 355+00                            | NF                         | NF                 |
|                                 |                                | 3.6 m (12ft)  | 610 m (2,000 ft)   | S/B SR 65 335+00 to 355+00                            | NF                         | NF                 |
|                                 |                                | 4.3 m (14 ft) | 610 m (2,000 ft)   | S/B SR 65 335+00 to 355+00                            | NF                         | NF                 |
|                                 |                                | 4.6 m (16 ft) | 610 m (2,000 ft)   | S/B SR 65 335+00 to 355+00                            | \$700,000                  | \$906,500          |
| C2.7 <sup>4</sup>               | 22,23,30<br>(Lincoln West Dev) | 3.0 m (10 ft) | 1311 m (4,300 ft)  | E/B Nicolaus to S/B SR 65 303+00 to 260+00            | NF                         | NF                 |
|                                 |                                | 3.6 m (12 ft) | 1311 m (4,300 ft)  | E/B Nicolaus to S/B SR 65 303+00 to 260+00            | NF                         | NF                 |
|                                 |                                | 4.3 m (14 ft) | 1311 m (4,300 ft)  | E/B Nicolaus to S/B SR 65 303+00 to 260+00            | NF                         | NF                 |
|                                 |                                | 4.6 m (16 ft) | 1311 m (4,300 ft)  | E/B Nicolaus to S/B SR 65 303+00 to 260+00            | \$1,855,000                | \$1,949,000        |
| C.2.12                          | 10a                            | 3.0 m (10 ft) |                    |   | NF                         | NF                 |
|                                 |                                | 3.6 m (12 ft) |                    |   | NF                         | NF                 |
|                                 |                                | 4.3 m (14 ft) |                    |   | NF                         | NF                 |
|                                 |                                | 4.6 m (16 ft) |                    |   | NF                         | NF                 |
| C2.13                           | 10b                            | 3.0 m (10 ft) | 304.8 m (1,000 ft) | E/B Wise Road near SR 65                              | NR                         | NR                 |
|                                 |                                | 3.6 m (12 ft) | 304.8 m (1,000 ft) | E/B Wise Road near SR 65                              | NR                         | NR                 |

| Sound Wall | Recvr(s) Protected | SW Height     | Length (ft)        | SW Location Description    | Total Reasonable Allowance | Engineers estimate |
|------------|--------------------|---------------|--------------------|----------------------------|----------------------------|--------------------|
|            |                    | 4.3 m (14 ft) | 304.8 m (1,000 ft) | E/B Wise Road near SR 65   | NR                         | NR                 |
|            |                    | 4.6 m (16 ft) | 304.8 m (1,000 ft) | E/B Wise Road near SR 65   | NR                         | NR                 |
| C2.10      | 4                  | 3.0 m (10 ft) | 6187 m (20,300 ft) | N/B SR 65 450+00 to 650+00 | NR                         | NR                 |
|            |                    | 3.6 m (12 ft) | 6187 m (20,300 ft) | N/B SR 65 450+00 to 650+00 | NR                         | NR                 |
|            |                    | 4.3 m (14 ft) | 6187 m (20,300 ft) | N/B SR 65 450+00 to 650+00 | NR                         | NR                 |
|            |                    | 4.6 m (16 ft) | 6187 m (20,300 ft) | N/B SR 65 450+00 to 650+00 | NR                         | NR                 |
| C2.11      | 5                  | 3.0 m (10 ft) | 5060 m (16,600 ft) | S/B SR 65 650+00 to 490+00 | \$74,000                   | \$3,582,900        |
|            |                    | 3.6 m (12 ft) | 5060 m (16,600 ft) | S/B SR 65 650+00 to 490+00 | \$74,000                   | \$4,299,400        |
|            |                    | 4.3 m (14 ft) | 5060 m (16,600 ft) | S/B SR 65 650+00 to 490+00 | \$78,000                   | \$5,016,000        |
|            |                    | 4.6 m (16 ft) | 5060 m (16,600 ft) | S/B SR 65 650+00 to 490+00 | \$78,000                   | \$7,524,000        |
| C2.8       | 2                  | 3.0 m (10 ft) |                    |                            | NF                         | NF                 |
|            |                    | 3.6 m (12 ft) |                    |                            | NF                         | NF                 |
|            |                    | 4.3 m (14 ft) |                    |                            | NF                         | NF                 |
|            |                    | 4.6 m (16 ft) |                    |                            | NF                         | NF                 |
| C2.9       | 1                  | 3.0 m (10 ft) |                    |                            | NF                         | NF                 |
|            |                    | 3.6 m (12 ft) |                    |                            | NF                         | NF                 |
|            |                    | 4.3 m (14 ft) |                    |                            | NF                         | NF                 |
|            |                    | 4.6 m (16 ft) |                    |                            | NF                         | NF                 |

<sup>1</sup> Southwest quad of SR 65 @ Ferrari Ranch is commercial (NR-26)

<sup>2</sup> 16b NF for all heights

<sup>3</sup> Shields 16a only

<sup>4</sup> If homes are condemned west of SR 65 from station 289+00 to 275+00 soundwalls may be dropped for this segment. Undetermined at this time

NF- Not Feasible, NR- No Receptors

**Table 4-13 Soundwalls Evaluated for Abatement Alternative D1**

| Sound Wall         | Recvr(s) Protected | SW Height     | Length (ft)      | SW Location Description                             | Total Reasonable Allowance | Engineers estimate |
|--------------------|--------------------|---------------|------------------|---|----------------------------|--------------------|
| D1.1               | 19 (Comm.)         | 3.0 m (10 ft) | 671 m (2,200 ft) | N/B SR65 to Ferrari Ranch Off-Ramp 168+00 to 190+00 | NR                         | NR                 |
|                    |                    | 3.6 m (12ft)  | 671 m (2,200 ft) | N/B SR65 to Ferrari Ranch Off-Ramp 168+00 to 190+00 | NR                         | NR                 |
|                    |                    | 4.3 m (14 ft) | 671 m (2,200 ft) | N/B SR65 to Ferrari Ranch Off-Ramp 168+00 to 190+00 | NR                         | NR                 |
|                    |                    | 4.6m (16 ft)  | 671 m (2,200 ft) | N/B SR65 to Ferrari Ranch Off-Ramp 168+00 to 190+00 | NR                         | NR                 |
| D1.2a <sup>1</sup> | 20                 | 3.0 m (10 ft) | 610 m (2,000ft)  | W/B Ferrari Ranch to N/B SR65 190+00 to 210+00      | NF                         | NF                 |
|                    |                    | 3.6 m (12ft)  | 610 m (2,000ft)  | W/B Ferrari Ranch to N/B SR65 190+00 to 210+00      | NF                         | NF                 |
|                    |                    | 4.3 m (14 ft) | 610 m (2,000ft)  | W/B Ferrari Ranch to N/B SR65 190+00 to 210+00      | \$700,000                  | \$604,400          |
|                    |                    | 4.6 m (16ft)  | 610 m (2,000ft)  | W/B Ferrari Ranch to N/B SR65 190+00 to 210+00      | \$700,000                  | \$906,500          |
| D1.2b <sup>1</sup> | 29 (3-D Dev.)      | 3.0 m (10 ft) | 610 m (2,000ft)  | N/B SR65 220+00 to 240+00                           | NF                         | NF                 |
|                    |                    | 3.6 m (12ft)  | 610 m (2,000ft)  | N/B SR65 220+00 to 240+00                           | \$805,000                  | \$518,000          |

| Sound Wall        | Recvr(s) Protected   | SW Height      | Length (ft)      | SW Location Description                        | Total Reasonable Allowance | Engineers estimate |
|-------------------|----------------------|----------------|------------------|--|----------------------------|--------------------|
|                   |                      | 4.3 m (14 ft)  | 610 m (2,000ft)  | N/B SR65 220+00 to 240+00                      | \$851,000                  | \$604,400          |
|                   |                      | 4.6m (16 ft)   | 610 m (2,000ft)  | N/B SR65 220+00 to 240+00                      | \$851,000                  | \$906,500          |
| D1.3 <sup>2</sup> | 30 (3-D Development) | 3.0 m (10 ft)  | 610 m (2,000ft)  | S/B SR65 240+00 to 220+00                      | \$1,400,000                | \$431,700          |
|                   |                      | 3.6 m (12ft)   | 610 m (2,000ft)  | S/B SR65 240+00 to 220+00                      | \$1,480,000                | \$518,000          |
|                   |                      | 4.3 m (14 ft)  | 610 m (2,000ft)  | S/B SR65 240+00 to 220+00                      | \$1,480,000                | \$604,400          |
|                   |                      | 4.6 m (16ft)   | 610 m (2,000ft)  | S/B SR65 240+00 to 220+00                      | \$1,560,000                | \$906,500          |
| D1.4              | 18                   | 3.0 m (10 ft)  | 671 m (2,200 ft) | E/B Ferrari Ranch to S/B SR65 190+00 to 168+00 | \$2,100,000                | \$474,900          |
|                   |                      | 3.6 m (12ft)   | 671 m (2,200 ft) | E/B Ferrari Ranch to S/B SR65 190+00 to 168+00 | \$2,100,000                | \$569,800          |
|                   |                      | 4.3 m (14 ft)  | 671 m (2,200 ft) | E/B Ferrari Ranch to S/B SR65 190+00 to 168+00 | \$2,100,000                | \$664,800          |
|                   |                      | 4.6 m (16ft)   | 671 m (2,200 ft) | E/B Ferrari Ranch to S/B SR65 190+00 to 168+00 | \$2,220,000                | \$997,200          |
| D1.5              | 14                   | 3.0 m (10 ft)  | 671 m (2,200 ft) | N/B65 249+00 to 271+00                         | \$37,000                   | \$474,900          |
|                   |                      | 3.6 m (12ft)   | 671 m (2,200 ft) | N/B65 249+00 to 271+00                         | \$37,000                   | \$569,800          |
|                   |                      | 4.3 m (14 ft)  | 671 m (2,200 ft) | N/B65 249+00 to 271+00                         | \$39,000                   | \$664,800          |
|                   |                      | 4.6 m (16ft)   | 671 m (2,200 ft) | N/B65 249+00 to 271+00                         | \$39,000                   | \$997,200          |
| D1.6              | 13                   | 3.0 m (10 ft)  | 823 m (2,700ft)  | N/B65 322+00 to 349+00                         | \$1,036,000                | \$582,800          |
|                   |                      | 3.6 m (12ft)   | 823 m (2,700ft)  | N/B65 322+00 to 349+00                         | \$1,036,000                | \$699,300          |
|                   |                      | 4.3 m (14 ft)  | 823 m (2,700ft)  | N/B65 322+00 to 349+00                         | \$1,092,000                | \$815,900          |
|                   |                      | 4.6 m (16ft)   | 823 m (2,700ft)  | N/B65 322+00 to 349+00                         | \$1,092,000                | \$1,223,800        |
| D1.11             | 12                   | 3.0 m (10 ft)  |                  |  | NF                         | NF                 |
|                   |                      | 3.6 m (12ft)   |                  |  | NF                         | NF                 |
|                   |                      | 4.3 m (14 ft)  |                  |  | NF                         | NF                 |
|                   |                      | 4.6 m (16ft)   |                  |  | NF                         | NF                 |
| D1.10             | 7                    | 3.0 m (10 ft)  | 1433 m (4,700ft) | N/B SR65 505+00 to 552+00                      | NF                         | NF                 |
|                   |                      | 3.6 m (12ft)   | 1433 m (4,700ft) | N/B SR65 505+00 to 552+00                      | NF                         | NF                 |
|                   |                      | 4.3 m (14 ft)  | 1433 m (4,700ft) | N/B SR65 505+00 to 552+00                      | NF                         | NF                 |
|                   |                      | 4.6 m (16f ft) | 1433 m (4,700ft) | N/B SR65 505+00 to 552+00                      | NF                         | NF                 |
| D1.7              | 4                    | 3.0 m (10 ft)  | 823 m (2,700ft)  | N/B SR65 621+00 to 648+00                      | NF                         | NF                 |
|                   |                      | 3.6 m (12ft)   | 823 m (2,700ft)  | N/B SR65 621+00 to 648+00                      | \$35,000                   | \$699,300          |
|                   |                      | 4.3 m (14 ft)  | 823 m (2,700ft)  | N/B SR65 621+00 to 648+00                      | \$35,000                   | \$815,900          |
|                   |                      | 4.6 m (ft)     | 823 m (2,700ft)  | N/B SR65 621+00 to 648+00                      | \$35,000                   | \$1,223,800        |
| D1.9              | 2                    | 3.0 m (10 ft)  | 427 m (1,400ft)  | W/B Riosa Rd to N/B SR65 691+00 to 701+00      | \$210,000                  | \$302,200          |
|                   |                      | 3.6 m (12ft)   | 427 m (1,400ft)  | W/B Riosa Rd to N/B SR65 691+00 to 701+00      | \$210,000                  | \$362,600          |
|                   |                      | 4.3 m (14 ft)  | 427 m (1,400ft)  | W/B Riosa Rd to N/B SR65 691+00 to 701+00      | \$210,000                  | \$423,100          |
|                   |                      | 4.6 m (16 ft)  | 427 m (1,400ft)  | W/B Riosa Rd to N/B SR65 691+00 to 701+00      | \$222,000                  | \$634,600          |
| D1.8              | 1                    | 3.0 m (10 ft)  | 1372 m (4,500ft) | N/B SR65 705+00 to 750+00                      | NR                         | NR                 |
|                   |                      | 3.6 m (12ft)   | 1372 m (4,500ft) | N/B SR65 705+00 to 750+00                      | NR                         | NR                 |
|                   |                      | 4.3 m (14 ft)  | 1372 m (4,500ft) | N/B SR65 705+00 to 750+00                      | NR                         | NR                 |

| Sound Wall | Recvr(s) Protected | SW Height     | Length (ft)      | SW Location Description   | Total Reasonable Allowance | Engineers estimate |
|------------|--------------------|---------------|------------------|---------------------------|----------------------------|--------------------|
|            |                    | 4.6 m (16 ft) | 1372 m (4,500ft) | N/B SR65 705+00 to 750+00 | NR                         | NR                 |

<sup>1</sup> Section of SR65 traverses thru Ag land, <sup>2</sup> SW quad of SR65/Woodside I/C is commercial

NF Not Feasible, NR No Receptors

**Table 4-14 Soundwalls Evaluated for Abatement Alternative D13**

| Sound Wall | Recvr(s) Protected    | SW Height     | Length (ft)       | SW Location Description                             | Total Reasonable Allowance | Engineers estimate | Soundwall Reasonable & Feasible |
|------------|-----------------------|---------------|-------------------|---|----------------------------|--------------------|---------------------------------|
| D13.1      | 19 (Comm.)            | 3.0 m (10 ft) | 671 m (2,200 ft)  | N/B SR65 to Ferrari Ranch Off-Ramp 664+00 to 686+00 | NF                         | NF                 | No                              |
|            |                       | 3.6 m (12 ft) | 671 m (2,200 ft)  | N/B SR65 to Ferrari Ranch Off-Ramp 664+00 to 686+00 | \$1,890,000                | \$569,800          | No                              |
|            |                       | 4.3 m (14 ft) | 671 m (2,200 ft)  | N/B SR65 to Ferrari Ranch Off-Ramp 664+00 to 686+00 | \$1,890,000                | \$664,800          | yes                             |
|            |                       | 4.6 m (16 ft) | 671 m (2,200 ft)  | N/B SR65 to Ferrari Ranch Off-Ramp 664+00 to 686+00 | \$1,998,000                | \$997,200          | yes                             |
| D13.2      | 20, 29 (3D Dev)       | 3.0 m (10 ft) | 1859 m (6,100 ft) | W/B Ferrari Ranch to N/B SR65 686+00 to 747+00      | NF                         | NF                 | No                              |
|            |                       | 3.6 m (12 ft) | 1859 m (6,100 ft) | W/B Ferrari Ranch to N/B SR65 686+00 to 747+00      | NF                         | NF                 | No                              |
|            |                       | 4.3 m (14 ft) | 1859 m (6,100 ft) | W/B Ferrari Ranch to N/B SR65 686+00 to 747+00      | \$1,505,000                | \$1,843,300        | no                              |
|            |                       | 4.6 m (16 ft) | 1859 m (6,100 ft) | W/B Ferrari Ranch to N/B SR65 686+00 to 747+00      | \$1,591,000                | \$2,764,900        | no                              |
| D13.3      | 30(3-D Dev            | 3.0 m (10 ft) | 1036 m (3,400 ft) | S/B SR65 746+00 to 712+00                           | NF                         | NF                 | No                              |
|            | 26 (Lincoln Crossing) | 3.6 m (12 ft) | 1036 m (3,400 ft) | S/B SR65 746+00 to 712+00                           | \$1,400,000                | \$880,600          | Yes                             |
|            |                       | 4.3 m (14 ft) | 1036 m (3,400 ft) | S/B SR65 746+00 to 712+00                           | \$1,480,000                | \$1,027,400        | Yes                             |
|            |                       | 4.6 m (16 ft) | 1036 m (3,400 ft) | S/B SR65 746+00 to 712+00                           | \$1,480,000                | \$1,541,100        | no                              |
| D13.4      | 18                    | 3.0 m (10 ft) | 671 m (2,200 ft)  | E/B Ferrari Ranch to S/B SR65 686+00 to 664+00      | NF                         | NF                 | No                              |
|            |                       | 3.6 m (12 ft) | 671 m (2,200 ft)  | E/B Ferrari Ranch to S/B SR65 686+00 to 664+00      | \$2,220,000                | \$569,800          | yes                             |
|            |                       | 4.3 m (14 ft) | 671 m (2,200 ft)  | E/B Ferrari Ranch to S/B SR65 686+00 to 664+00      | \$2,220,000                | \$664,800          | Yes                             |
|            |                       | 4.6 m (16 ft) | 671 m (2,200 ft)  | E/B Ferrari Ranch to S/B SR65 686+00 to 664+00      | \$2,340,000                | \$997,200          | Yes                             |
| D13.6      | 27,28                 | 3.0 m (10 ft) | 488 m (1,600 ft)  | N/B SR65 765+00 to 781+00                           | NF                         | NF                 | No                              |
|            |                       | 3.6 m (12 ft) | 488 m (1,600 ft)  | N/B SR65 765+00 to 781+00                           | NF                         | NF                 | No                              |
|            |                       | 4.3 m (14 ft) | 488 m (1,600 ft)  | N/B SR65 765+00 to 781+00                           | \$2,960,000                | \$483,500          | No                              |
|            |                       | 4.6 m (16 ft) | 488 m (1,600 ft)  | N/B SR65 765+00 to 781+00                           | \$3,120,000                | \$725,200          | Yes                             |
| D13.11     | 14                    | 3.0 m (10 ft) | 610 m (2,000 ft)  | S/B SR65 783+00 to 763+00                           | NF                         | NF                 | No                              |
|            |                       | 3.6 m (12 ft) | 610 m (2,000 ft)  | S/B SR65 783+00 to 763+00                           | NF                         | NF                 | No                              |
|            |                       | 4.3 m (14 ft) | 610 m (2,000 ft)  | S/B SR65 783+00 to 763+00                           | NF                         | NF                 | No                              |
|            |                       | 4.6 m (16 ft) | 610 m (2,000 ft)  | S/B SR65 783+00 to 763+00                           | NF                         | NF                 | No                              |
| D13.10     | 13                    | 3.0 m (10 ft) | 427 m (1,400 ft)  | N/B SR65 833+00 to 847+00                           | NF                         | NF                 | No                              |
|            |                       | 3.6 m (12 ft) | 427 m (1,400 ft)  | N/B SR65 833+00 to 847+00                           | NF                         | NF                 | No                              |
|            |                       | 4.3 m (14 ft) | 427 m (1,400 ft)  | N/B SR65 833+00 to 847+00                           | NF                         | NF                 | No                              |

| Sound Wall | Recvr(s) Protected | SW Height     | Length (ft)       | SW Location Description     | Total Reasonable Allowance | Engineers estimate | Soundwall Reasonable & Feasible |
|------------|--------------------|---------------|-------------------|-----------------------------|----------------------------|--------------------|---------------------------------|
|            |                    | 4.6 m (16 ft) | 427 m (1,400 ft)  | N/B SR65 833+00 to 847+00   | NF                         | NF                 | No                              |
| D13.9      | 11                 | 3.0 m (10 ft) | 2438 m (8,000 ft) | N/B SR65 915+00 to 1005+00  | NF                         | NF                 | No                              |
|            |                    | 3.6 m (12 ft) | 2438 m (8,000 ft) | N/B SR65 915+00 to 1005+00  | NF                         | NF                 | No                              |
|            |                    | 4.3 m (14 ft) | 2438 m (8,000 ft) | N/B SR65 915+00 to 1005+00  | NF                         | NF                 | No                              |
|            |                    | 4.6 m (16 ft) | 2438 m (8,000 ft) | N/B SR65 915+00 to 1005+00  | NF                         | NF                 | No                              |
| D13.8      | 7                  | 3.0 m (10 ft) | 518 m (1,700 ft)  | S/B SR65 1043+00 to 1060+00 | NF                         | NF                 | No                              |
|            |                    | 3.6 m (12 ft) | 518 m (1,700 ft)  | S/B SR65 1043+00 to 1060+00 | NF                         | NF                 | No                              |
|            |                    | 4.3 m (14 ft) | 518 m (1,700 ft)  | S/B SR65 1043+00 to 1060+00 | NF                         | NF                 | No                              |
|            |                    | 4.6 m (16 ft) | 518 m (1,700 ft)  | S/B SR65 1043+00 to 1060+00 | NF                         | NF                 | No                              |
| D13.5      | 4                  | 3.0 m (10 ft) | 945 m (3,100 ft)  | N/B SR65 1145+00 to 1176+00 | NF                         | NF                 | No                              |
|            |                    | 3.6 m (12 ft) | 945 m (3,100 ft)  | N/B SR65 1145+00 to 1176+00 | \$35,000                   | \$802,900          | No                              |
|            |                    | 4.3 m (14 ft) | 945 m (3,100 ft)  | N/B SR65 1145+00 to 1176+00 | \$35,000                   | \$936,800          | No                              |
|            |                    | 4.6 m (16 ft) | 945 m (3,100 ft)  | N/B SR65 1145+00 to 1176+00 | \$35,000                   | \$1,405,100        | No                              |

NF- Not Feasible, NR- No Receptors

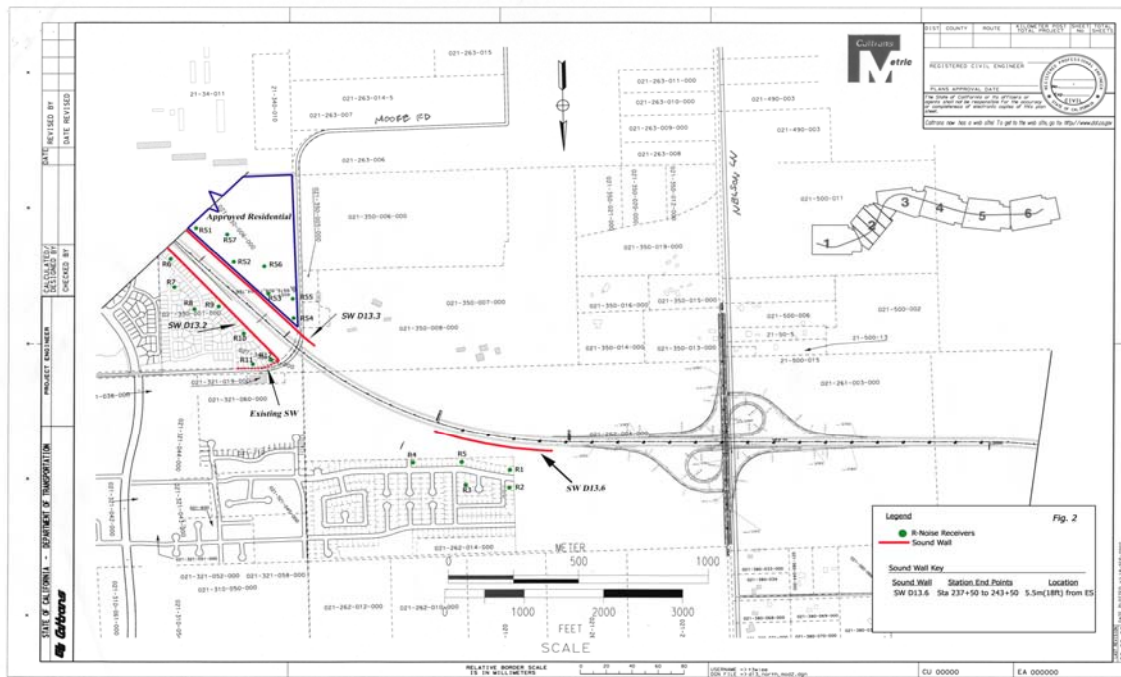
#### 4.5.3 Preliminary Noise Abatement Decision (Soundwall Descriptions)

Based on the studies completed and public and local government comment, Caltrans intends to incorporate noise abatement measures in the form of sound walls at the locations identified in Table 4-15. It is noted the City of Lincoln is not in favor of a sound wall shielding the proposed community park, located at SR65 and Ferrari Ranch Road, due to public safety concerns arising from potential illicit activity. Modeling based on current design data indicates that the barriers would result in a noise level reduction of 5 dBA to 11 dBA. If, during final design conditions have substantially changed, noise barriers may either be modified or not provided. The final decision of the noise barriers will be made upon completion of the project design and the public involvement process.

**Table 4-15 Proposed Soundwalls**

|            | Sound Wall | Height (ft)   | Length (ft)      | SW Location Description   |
|------------|------------|---------------|------------------|---|
| <b>D13</b> | D13.2      | 4.3 m (14 ft) | 1090 m (3575 ft) | N/B SR65 ES 221+60 to 223+00, N/B SR65 R/W Line 223+00 to 232+50  |
|            | D13.3      | Ht. Varies    | 1780m (3838 ft)  | SB SR65 R/W Line 233+00 to 217+30 = 4.3m(14 ft), 217+30 to 215+20 = 4.9m(16 ft)                               |
|            | D13.4      | Ht. Varies    | 1030 m (3378 ft) | S/B SR65 ES 214+80 to 213+30 = 4.3m(14 ft), 213+30 to 211+40 = 3.7m (12 ft), 211+40 to 204+50 = 3.0 m (10 ft) |
|            | D13.6      | 4.9 m (16 ft) | 600 m (1,968 ft) | N/B SR65 5.5m from ES 237+50 to 243+50  |



**Figure 4-1 Sound Barrier Locations**

#### 4.5.4 Construction Noise Impacts

Two types of short-term noise impacts would occur during construction of the project. First, construction crew commutes and the transport of construction equipment and materials to the project site would incrementally increase noise levels on access roads leading to the site. The pieces of heavy equipment for grading and construction activities will be moved on site, will remain for the duration of each construction phase and will not add to the daily traffic volume. When added to the current traffic volumes along SR 65 and Main Street, the projected volume of construction traffic will be small and its associated long-term noise level change will not be perceptible. However, there will be a relatively high single event noise exposure potential with passing trucks at a maximum level of 87 dBA  $L_{max}$  at 15.24 m (50 ft).

The second type of short-term noise impact is related to noise generated during excavation, grading and building erection on the project site. Construction of the proposed project is expected to require the use of earthmovers, bulldozers, water and pickup trucks. Noise typically associated with the use of construction equipment is estimated between 79 and 89 dBA at a distance of 50 feet from the project site for the grading phase.

### Construction noise impact abatement

Initial construction has the potential to create noise impacts at the homes located along SR 65 and avoidance and minimization measures are warranted to reduce these impacts to the extent feasible. Implementation of these measures would reduce construction noise impacts. Applicable measures include the following:

- Standard practice requires that construction be restricted to between the hours of 7:00 a.m. and 7:00 p.m. (8:00 a.m. and 7:00 p.m. on Saturdays) and not permitted on Sundays and Federal holidays.
- All construction equipment must conform to the provisions of the Department Standard Specifications, Section 7-10/I; "Sound Control Requirements." This section requires the contractor to comply with all local rules and regulations (i.e., City of Lincoln and Placer County) that apply to any work as part of the contract.
- Portable equipment will be located as far as possible from noise sensitive locations as is feasible.
- Construction vehicle staging areas and equipment maintenance areas will be located as far as possible from sensitive receptor locations.

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## 4.6 WATER QUALITY

This section summarizes the Water Quality Assessment Report, which documents the streams, lakes, rivers and other receiving waters that could be affected by this project and the potential impacts on those waters by the construction and maintenance of each alternative. In addition, this section evaluates the project for compliance with the Sole Source Aquifer (SSA) program and the Drinking Water Source Assessment and Protection (DWSAP) program.

Other regulatory requirements discussed below are the USACE Section 404 permit, the California Department of Fish and Game 1602 Agreement, and the California Regional Water Quality Control Board Section 401 water quality certification and the National Pollution Discharge Elimination System (NPDES) permit.

In Section 4.8, Natural Resources, the impacts of the project on water quality are discussed as they pertain to the natural resources and protected species.

Potential impacts for this project can be divided into those associated with short-term construction activities and long-term operations and maintenance activities. The construction activities discussed below would apply to all of the build alternatives, while the operation activities would apply to all the "build" and "no build" alternatives.

#### **4.6.1 Regulatory Requirements**

The National Pollution Discharge Elimination System (NPDES) was established by the EPA and implemented by the states Regional Water Quality Control Boards. Caltrans currently has a statewide permit for the NPDES program. Caltrans has developed a State Storm Water Management Plan (SWMP) designed to reduce the discharge of pollutants associated with storm water and non-storm water to the maximum extent practicable. The SWMP describes how Caltrans will comply with NPDES requirements through the application of various Best Management Practices (BMPs). BMPs include those practices that provide pollution control benefit, are feasible to implement and meet legal and legislative funding restraints (Camp, Dresser & McKee 1999).

In addition to BMPs, the SWMP requires a Storm Water Pollution Prevention Plan (SWPPP) for projects where the impacts are greater than 2 ha (5 ac). Requirements of permits and plans would be followed in accordance with the States SWMP addressing erosion control and sediment control management. This project would require submittal of a SWPPP from the construction Contractor prior to the start of construction activities. The SWPPP will address water pollution controls during construction. The SWPPP specifies measures to prevent soil, sediments, construction materials, and fluids from being carried off the site by storm water. Such measures typically include: covering stockpiles with polyethylene materials; placement of sediment trapping devices surrounding drainage inlets and storm drain openings as well as the toe of slopes; and use of temporary, on-site storage systems for contaminated waters and excavated materials. Additionally, the SWPPP would identify locations where lubricants, fuels, reinstates, and other fluids are to be handled, and discuss measures to be implemented for controlling spills

Other regulatory/permit requirements are the USACE Section 404 permit, the California Department of Fish and Game Section 1602 Stream Bed Alteration Agreement and the California Regional Water Quality Control Board Section 401 water quality certification. These requirements are discussed in more depth in the Natural Resources section. Measures to comply with permit requirements as they pertain to water quality are discussed below.

#### **4.6.2 Impacts on Sole Source Aquifers or Well Head Protection Areas**

To help prevent groundwater contamination, the EPA has established the Sole Source Aquifer (SSA) program. The SSA program was established to increase public awareness of groundwater resources and help prevent contamination of aquifers that are the only available local or regional source of drinking water and supply more than 50

percent of a community's drinking water. The EPA web site listing the SSA in California was consulted and showed no sole source aquifer in Placer County (EPA, 1999).

The State of California Department of Health Services (DHS) recently developed the Drinking Water Source Assessment and Protection Program (DWSAP) program to help protect drinking water wells from contamination. All public water supply wells used for domestic purposes will be subject to the DWSAP. This program evaluates individual wells' susceptibility for potential contamination caused by existing conditions (e.g., underground tanks, septic systems, etc.), and provides guidelines to evaluate the potential impacts of proposed projects such as the Lincoln Bypass.

#### **4.6.3 Groundwater Impacts**

The only penetration into the water table that would be anticipated as part of any build alternatives would be support piles and footings for bridges and structures. These minor and isolated intrusions are not expected to impact the quality of groundwater.

Wells within the proposed right-of-way will be treated in accordance with the requirements set forth in the Highway Design Manual (Caltrans 1992) and other California codes. (See Figure 3-14 in Chapter 3) Municipal wells are required to have wellhead protection areas delineated under the State of California Department of Health Services DWSAP program. These protection areas can be delineated in a site-specific manner or in a more general calculated fixed radius (CFR) method. Until the City of Lincoln completes their delineation, the CFR minimum distances will be considered in the design: 183 m (600 ft) for Zone A (microbiological), 305 m (1,000 ft) for Zone B5 (chemical), and 457 m (1,500 ft) for Zone B10 (chemical). The final delineation of the wellhead protection areas is anticipated to be complete before the Department completes designing the preferred alternative. Wells are shown in Figure 3-14 in Chapter 3. Additional municipal wells may need to be provided for the water supply for the City of Lincoln. This is not expected to impact the quality of ground water.

Impacts to groundwater for all of the alternatives are minor. The remainder of this water quality section focuses on surface water quality impacts.

#### **4.6.4 Construction Impacts**

Suspended material caused by erosion in storm water runoff is considered by Caltrans as a pollutant of primary importance. Project construction activities such as grading and vegetation removal would result in soil and ground disturbances, creating loose or unprotected soil that could be transported by surface runoff or wind to nearby watercourses. Such increases in sediment and turbidity could negatively affect receiving water quality. These impacts have the potential to occur for the duration of construction

activities. Beneficial uses that could be affected include REC-1, REC-2, WARM, COLD, WILD, MIGR and SPWN<sup>1</sup>.

The following construction activities would be part of any of the build alternatives, and may contribute to increases in sediment, turbidity, and floating materials to receiving waters:

- **Daily contractor activity** - Routine construction activities such as material delivery, storage and usage, waste management, vehicle/equipment cleaning and operation and use of a construction staging area could result in generation of dust, sediments and debris.
- **Vegetation removal/trimming** - Removal or trimming of vegetation would be required for both construction and access. This activity would eliminate the groundcover that protects the topsoil. Exposed topsoil would be more susceptible to erosion. Additionally, trimmings could fall or be carried by runoff into surface waters, resulting in introduction of floating material and the potential for increased organic loading to the creeks.
- **Grading** - Grading would include removal of the natural and/or stabilizing cover (topsoil) and the creation of engineered slopes using fill material. Prior to establishment of temporary or permanent erosion control measures, graded material would be highly susceptible to erosion.
- **Temporary roads** - Construction of temporary roads would require grading, vegetation removal and other changes to the topography and drainage characteristics of the watershed. These temporary roads are typically composed of native material and/or aggregate base rock.
- **Activities within the creek corridor** - Construction of culverts, bridges and viaducts require an extensive presence in stream corridors. These activities may also require construction of temporary access roads; temporary cofferdams and/or jetties to re-route the watercourses.
- **De-watering** - Construction may require localized de-watering in areas of shallow groundwater. De-watering activities would be continuous but temporary for the duration of work in a particular area. Discharged groundwater may be high in turbidity.

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<sup>1</sup> The beneficial uses for the two watersheds are: MUN = Municipal, AGR I = Agricultural Irrigation, AGR S = Ag. Stock Watering, POW = Industry Power, REC-1 = Recreation Contact, REC-2 = Other Non-Contact Recreation, WARM = Freshwater Habitat Warm, COLD = Freshwater Habitat Cold, MIGR(W) = Migration Warm, MIGR(C) = Migration Cold, SPWN(W) = Spawning Warm, SPWN(C) = Spawning Cold, and WILD = Wildlife Habitat.

- **Construction of temporary structures** - To support construction equipment, laborers and construction forms, it would be necessary to erect falsework. Falsework is typically constructed of wood and metal connectors. Although the majority of woodcutting would take place outside of the stream corridors, some woodcutting would be necessary as the falsework is erected. This woodcutting could introduce sawdust to surface waters. Disassembly of the falsework may result in small pieces of wood, nails and metal cuttings entering creeks.
- **Seeding and application of fertilizers and nutrients** - To prepare the ground for temporary and/or permanent cover and promote better growth, fertilizers and plant nutrients may be applied before and after planting. In the early stages of the seeding process, surface runoff could wash some of the re-vegetation material, fertilizers, nutrients and seeds into surface waters.

#### **Avoidance and minimization of Construction impacts due to erosion**

To address these potential water quality impacts, Caltrans would require the contractor to use a combination of BMPs during construction through the Plans, Specification and Estimates (PS&E) documents. BMPs include temporary erosion controls such as silt fencing, fiber rolls and drill seeding with tackifier, which will be used during the construction process as required to preserve water quality. The Department would include special provisions in the PS&E for this project requiring the contractor to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP), and other project specific Standard Special Provisions (SSP).

The purpose of the BMP is to stabilize disturbed soil, to minimize erosion and to capture and remove sediment suspended in runoff before the runoff leaves the site. These measures would provide a high degree of protection to the local receiving waters from discharge of sediment during construction. With the implementation of Caltrans standard practices and procedures, all of the build alternatives have minimized impacts from construction-induced erosion.

#### **4.6.5 Construction impacts from Oil, Greases, and Chemical Contamination**

Construction activities may introduce chemicals, oils and greases that could be carried by surface runoff to surface water if not properly managed. These impacts have the potential to occur for the duration of construction activities. Beneficial uses that could be impacted include REC-1, REC-2, WARM, COLD, RARE, MIGR and SPWN. The following construction activities would be part of any of the build alternatives:

- **Cement and grout** - As part of the bridge construction process, concrete and grout work would take place within stream corridors. Spillage of concrete and grout into



receiving waters during bridge construction could increase turbidity and alter the pH.

- **Application and storage of chemicals** - Accidental spills, improper storage, and improper application of chemicals during construction could potentially impact water quality. Chemicals such as herbicides and fertilizers could also be washed into the creeks. Herbicides could be poisonous to fish and aquatic plants. Conversely, fertilizers may promote algae growth, which would reduce dissolved oxygen levels.
- **Application and storage of oils, greases and fuels** - Improper storage of oils and fuels could result in accidental spills and/or leaks within the construction area. Accidental spills during refueling and maintenance of construction vehicles and equipment could occur. Surface runoff could transport these materials to the local creeks. Similarly, application of petroleum chemicals during road construction could be washed into surface waters. These materials could have toxic effects on aquatic organisms.

#### **Avoidance and Minimization of Construction impacts from Oil, Grease or chemical contamination**

Caltrans SSP prohibit the contractor from discharging oils, greases or chemicals into receiving waters. For example, on this project, equipment operating in water bodies would be required to be steam cleaned prior to arrival on site and be maintained in a clean condition during the length of activities. With implementation of the BMPs and SSPs, none of the build alternatives would have a negative impact on the environment from construction-induced oils, greases and chemicals.

#### **4.6.6 Construction Impacts Due To Increases in Water Temperature**

Certain construction activities may contribute to short-term temperature changes of the surface water. Beneficial uses that could be affected include COLD, MIGR and SPWN. These activities include:

- **Concrete curing** - Piers are typically constructed using reinforced concrete. Once concrete is poured in the forms, it takes up to several weeks to set - referred to as the curing period. During the curing period, concrete releases heat into its surrounding environment. Water is often used during this process to prevent the concrete from hardening too fast. To the extent that this water were to reach surface waters, it could cause a localized increase in the ambient temperature.
- **Vegetation removal/trimming** - During construction, vegetation at or near the creeks would require trimming or removal. Vegetation provides shade, which

maintains cooler water temperature in the creeks. Once vegetation is removed or trimmed, water temperatures may increase due to exposure to direct sunlight.

- **Creek realignment** - Where segments of creeks are realigned, they may not have the same canopy cover/shade as before the project. Prior to vegetation reestablishment, increases in temperature may occur.

#### **Avoidance and Minimization for Short-Term Increases in Water Temperature**

Concrete curing would occur over a period of several weeks. It is so localized in nature that it is not expected to have a major impact on water temperature.

Regarding vegetation removal/trimming and creek realignments, Caltrans will follow standard practices for minimizing the amounts of vegetation trimmed or removed at crossings. To some extent, shade provided by the new crossings would tend to offset some loss in canopy cover through trimming/removal and realignment. Measurable temperature impacts are not expected where work is done in limited areas.

Treatment of runoff, such as diverting the water to detention ponds, may be required where storm water enters sensitive receiving waters, such as vernal pools. Additional drainage studies, surveys and bridge modeling will be required to finalize project plans and minimize floodplain encroachment.

#### **4.6.7 Long-term Impacts to Water Quality Due to Erosion**

As previously mentioned, sediment is of specific concern in the project area since it is listed as a source of impairment to beneficial uses. Following the construction process, disturbed areas would be stabilized through permanent re-vegetation or other means. The Storm Water Quality Handbook-Project Planning and Design Guide (PPDG) provides detailed procedures for design of permanent slope stabilization controls. Storm runoff detention is typically provided by detention ponds accessed via roadside ditches (Caltrans 1999).

In spite of re-vegetation efforts, sediment and turbidity could effect water quality. These impacts have the potential to occur for the duration of the project operation. Beneficial uses that could be affected include REC-1, REC-2, WARM, COLD, WILD, MIGR and SPWN. The following factors may also contribute to negative impacts:

- **Hydrologic impacts** - The increase in impervious areas could cause an increase in the peak flow and higher runoff volumes that could lead to stream downcutting, stream bank erosion and loss of stream structure. The result could be an increase in sediment and turbidity in receiving waters. Along with the increase in sediment, there is an increased opportunity for pollutants such as herbicides and road pollution to enter the streams.

- **Concentration of runoff** - Typical highway drainage design involves collecting runoff in pipes or ditches and discharging, either directly or indirectly, into creeks. To the extent that localized flows were concentrated and/or altered from pre-project conditions, potential impacts would be similar to those described for increases in impervious areas.

#### **Avoidance and Minimization for long-term impacts of erosion**

To address these potential water quality impacts resulting from project hydrology and concentration of runoff, the Department would utilize permanent BMPs incorporated into the design and construction of the project in combination with BMPs during maintenance operations.

Examples of the BMPs are directing highway runoff via ditches and culverts into retention basins and grading of embankments to minimize erosion potential.

In addition, the PPDG require that the design team take into account hydrologic impacts of the project and provide measures such that stream channel stability is maintained. With these measures in place, long-term impacts due to erosion will be minimal.

#### **4.6.8 Long-term impacts from Oils, Greases, and Chemical Contamination**

Highway runoff and other long-term maintenance activities may introduce chemicals, oils and greases to surface water. Beneficial uses that could be impacted include REC-1, REC-2, WARM, COLD, WILD and SPWN. Typical highway related activity and maintenance that affect runoff quality are:

- **Highway runoff** - Contaminants generated by traffic, pavement materials and airborne particles that settle and are carried by runoff into receiving waters.
- **Accidental spills** - Spills caused by highway-related traffic accidents have the ability to cause great damage to water quality, depending on the type and quantity of the material spilled.
- **Application of chemicals** - Application of chemicals from landscaping operation and maintenance activities could potentially enter into receiving waters. Herbicides could be poisonous to fish and aquatic plants. Conversely, fertilizers may promote algae growth, which would reduce dissolved oxygen levels.

Few, if any, of the hydrocarbons (except oil and grease), volatile and semi-volatile organic compounds or pesticides/herbicides are often found in highway runoff, given the rural setting of the site. There are no large industrial (manufacturing), agri-industrial (packing plants), or agricultural operation/activities in the project area that use large amounts of solvents, pesticides or herbicides.

Table 4-16 summarizes the results of Caltrans study on pollutants of concern in typical highway runoff. Water quality objectives established for the Bear River are also presented. Constituents with mean values exceeding water quality are highlighted in bold type.

**Table 4-16 Pollutants of Concern in Typical Highway Runoff**

| <b>Pollutant</b> | <b>No. of Samples</b> | <b>Mean Value (mg/L)</b> | <b>Water Quality Objective for the Bear River (mg/L)</b> |
|------------------|-----------------------|--------------------------|--|
| Barium           | 25                    | 0.13                     | 1.0  |
| Cadmium          | 30                    | 0.0009                   | 0.005  |
| Chromium         | 56                    | 0.0082                   | 0.05   |
| Copper           | 52                    | 0.035                    | 1.3  |
| Iron             | 27                    | 3.76                     | Not listed   |
| <b>Lead</b>      | <b>35</b>             | <b>0.0814</b>            | <b>0.015</b>   |
| Manganese        | 17                    | 0.08                     | Not listed   |
| Nickel           | 56                    | 0.0091                   | 0.1  |
| Zinc             | 62                    | 0.186                    | Not listed   |
| Oil and Grease   | Not listed            | 10.3                     | Qualitative Standard                                     |
| TSS              | Not listed            | 112                      | Not Available  |
| COD              | Not listed            | 120                      | Not Available  |
| Ammonia          | 25                    | 1.9                      | Not Available  |
| Nitrate          | 33                    | 2.8                      | 10   |
| TKN              | 37                    | 2.6                      | Not Available  |
| Phosphate        | 5                     | 0.4                      | Not Available  |
| Phosphorus       | 67                    | 0.3                      | Not Available  |

Source: Mean Values: Brown and Caldwell, 1997; Water Quality Objectives: RWQCBCVR, 1998.

If concentrations of potential pollutants were not sufficiently diluted upon entering the receiving waters, they could potentially impact water quality. The proposed impervious surface that would create highway runoff was compared to the total area in the watershed to determine whether the proposed project would result in an increase in pollutant loading to the receiving water that would exceed the water quality objectives. Paved surfaces in Caltrans right-of-way are less than 1% of the watershed. Therefore, highway runoff would be sufficiently diluted as to not cause an impact to receiving water quality.

The watershed areas were delineated on 7.5-minute USGS topographic maps. The paved width of the highway was assumed to be 36.6 m (120 ft), the maximum paved area, even though the right-of-way may exceed this dimension in places. The results are as follows:

The **Orchard Creek watershed** above SR 65 covers approximately 17.7 km<sup>2</sup> (11 mi<sup>2</sup>) (2849 ha [7040 ac]). All build alternatives will cover about 2.4 km (1.5 mi) (8.8 ha [21.8 ac]) of land. Any of the build alternatives would affect about 0.3% of the watershed.

The **Auburn Ravine watershed** above the City of Lincoln covers an area of about 53 km<sup>2</sup> (33 mi<sup>2</sup>) (8547 ha [21120 ac]). The alternative that has the longest section within the Auburn Ravine watershed is D13. This alternative affects about 8.8 ha (21.8 ac) or less than 0.1% of the watershed. Other alternatives would also affect less than 0.1% of the watershed.

The **Markham Ravine watershed** above the D alternatives is about 19.3 km<sup>2</sup> (12 mi<sup>2</sup>) (3108 ha [7680 ac]). The D alternatives affect about 20.6 ha (50.9 ac) or less than 0.6% of the watershed. Only 11.26 km<sup>2</sup> (7 mi<sup>2</sup>) (1813 ha [4480 ac]) of the Markham Ravine watershed is above the AC alternatives. These alternatives affect about 14.6 ha (36 ac) or approximately 0.8% of the watershed.

The **Coon Creek watershed** covers over 112.6 km<sup>2</sup> (70 mi<sup>2</sup>). Approximately 11.7 ha (29 ac) of land will be affected, or less than 0.1% of the watershed.

The **Yankee Slough watershed** above all of the alternatives is about 27.4 km<sup>2</sup> (17 mi<sup>2</sup>) (4403 ha [10,880 ac]). The AC and D alternatives affect about 23.6 ha (58.2 ac) or approximately 0.5% of the watershed.

### **Avoidance and Minimization for long-term impacts of Oil, Grease and Chemical Contamination**

The results demonstrate that paved surfaces in the Department's right-of-way would not be a very big percentage of the watershed. In all cases, the paved area is less than 1% of the watershed. Therefore, highway runoff would be sufficiently diluted as to not cause an impact to receiving water quality.

In addition, runoff from the highway right-of-way would be retained on-site to prevent an negative effects on the local surface and groundwater quality. When construction is complete, permanent erosion control measures and landscaping would be implemented throughout the project area. Final plans include short-term detention basins to treat the storm water run-off for run-off that cannot be separated from the sensitive receiving waters. These long ditches would be fairly flat and grass lined to slow the water and allow the grass to act as a filter, filtering out roadway pollutants. Near waterways, there will be an outlet control to hold the water and provide for more filtering. The water would not be held for longer than 72 hours so as not to become a mosquito breeding ground.

Vernal pool complexes that are cut off from sheet flow are included in the total impacts to wetlands. However, culverts will be used extensively to maintain flows to vernal pools. Environmentally Sensitive Areas (ESA's) will be established to prevent herbicides and pesticides from contaminating the vernal pools and waterways.

During final design, a more detailed evaluation will be made of the corridor hydraulics, with particular emphasis on ensuring that existing water flows are maintained. With these measures in place, long term impacts due to oil, grease and chemical contamination will be minimal and less than significant under CEQA.

#### **4.6.9 Long-term Increases in Water Temperature**

Certain activities may contribute to long-term temperature changes of the surface water after construction is complete which may affect existing water quality. Beneficial uses that could be affected include COLD, MIGR and SPWN. These activities include:

- **Increase in paved areas** - Due to continuous use and its affinity to absorb heat from sunlight, pavement surfaces may get warmer than soil. Highway runoff may be warmer than pre-project runoff temperature.
- **Creek crossings and realignments** - Where segments of creeks are crossed and possibly realigned, they may not have the same canopy cover/shade as before the project. The bridge crossings will provide permanent shade to the waterway. .

Paved surfaces in Caltrans right-of-way are less than 1% of the watershed. Therefore, it is not anticipated that increases in runoff temperatures from paved areas would lead to a measurable increase in stream temperatures and less than significant under CEQA.

#### **4.6.10 Summary of Effects on Water Quality**

Each of the alternatives will affect the water temperature and toxicity to varying degrees. The “No Build” alternative had the least effect, the AAC2 and A5C1 alternatives the next greatest effect and the D1 and D13 alternatives (including the preferred alternative), have the most effect. The magnitude of the increase in water temperature and toxicity from the bypass project is relatively small when comparing the impervious surface area of each alternative to the size of the watershed. The geographic extent of the effects is relatively small. The watersheds involved are a small segment of the Sacramento River Basin, approximately 0.5%.

The duration and frequency of the effect varies. During the first major rainfall, the toxic nature of the water is higher than any other time and the water quality objectives may be exceeded. Throughout the rest of the rainy season, the pollutant level is much lower, in most cases lower than the water quality objective. Monitoring of the water constituents would be necessary to determine when water quality objectives would be exceeded.

Water temperature would fluctuate throughout the rainy season. Whenever rain would wash into the waterways from impervious surfaces, the temperature would be higher than if it had washed from vegetated surfaces.



During construction, Caltrans Best Management Practices for Control of Water Pollution (Transportation Projects) will be implemented to minimize sedimentation. Temporary increases in sedimentation during construction are expected to be minimal.

Storm water runoff from the proposed roadway will be collected and routed into water treatment systems before discharging into drainages in the project area. The amount of pollutants discharged with storm water runoff will be minimized.

The city's monitoring program could be an effective evaluative mechanism for managing development and avoidance and minimization measures in order to maintain water quality objectives for the receiving waters. If monitoring indicated that the water exceeded toxic water quality objectives, then additional mechanisms could be instituted to limit the amount of toxic loading that enters the waterways.

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## 4.7 FLOODPLAIN

The proposed roadway typical cross-section will be designed to provide for an all-weather route to ensure safe passage of emergency vehicles and serve as an emergency evacuation route. The minimum roadway profile grade elevation will be 1.43 m (4.7 ft) above the existing ground elevation. This profile grade will ensure that the proposed bypass will be above existing ground and provide coverage for future drainage features. At the low points, the profile will be elevated to be at least 0.9m (3 ft) above the 100-year flood level.

In general, the proposed floodplain crossings listed in Table 3-21 in Chapter 3, will include bridges over the floodway or mainstream channel. Cross culverts will be provided through any embankment within the floodplain overbank area / floodway fringe to minimize the impacts of bridge approach embankment fills within the floodplain boundaries.

The vegetation and soils along the various proposed waterway crossings are similar in nature. The erosion hazard of the soils varies from slight erosion hazard in the floodway fringes to high erosion hazard in the recent alluvium deposits adjacent to stream channels. The availability of detailed soil information will ensure that appropriate erosion control measures are included to mitigate the floodplain encroachments.

Storm water detention measures are being provided to minimize increases to the peak flows resulting from the proposed roadway construction per discussions with the Placer County Flood Control Engineer. As a detention measure, roadside ditches would be designed to provide storm runoff detention. The project will not increase downstream velocity or peak flow. The project will increase the volume of flow within the project limits due to the impervious surfaces, but should have a negligible effect on downstream

flow. Post construction flows will be kept at pre-construction conditions by detaining the flow as it drains towards their original waterway destinations either by ditches or by detention basins. Preliminary plans include detention basins at the projects' north end near Riosa Road. The paved roadway area design has been reduced to the maximum extent possible thus minimizing the amount of runoff from impervious surfaces. Earthen conveyance systems have been conceptually developed with relatively flat slopes. Consequently, velocities are expected to be very low during a 25-year design storm. Most of the watersheds share the same directional flow, i.e. flow from east to west. The proposed project's orientation is predominately north south therefore impeding most of this flow. The ditches, designed to run parallel to the highway, will return this intercepted flow to its original waterway destination thus preserving the area's natural drainage. The earthen ditches shall be vegetated and discharge into natural streams and creeks that the project traverses. Existing cross drains located at the proposed project's northern limits will be incorporated into the drainage design concepts. These cross drains are designed as siphon systems and run under the South Sutter Water District Aqueduct.

Sediment loading is considered minimal given the flattened slopes and the slope re-vegetation included as permanent BMPs. Culverts shall be fitted with Flared End Sections (FES) to facilitate grading and maintenance. Although drainage velocities are low in the longitudinal ditches, Rock Energy Dissipaters (REDs) will be provided at the outlets to retard the peak flow into local waterways and to prevent potential scour in flood conditions. Additionally, the proposed bridges will be designed to minimize downstream impacts.

To establish the estimated 100-year Base Floodplain Elevation (BFE), the Flood Insurance Rate Map Zone A floodplain boundaries were superimposed onto a USGS topographic map and the contour elevation was interpolated. The estimated 100-year BFE for the riverine flooding typical to this study is adjusted by one-half the contour interval to account for any elevation difference between the left overbank boundaries and the right overbank boundaries.

### **Alternative AAC2**

This project alignment conforms to the existing SR 65 alignment approximately 0.5 km (0.3 mi) south of Industrial Avenue. There is no anticipated encroachment by this project onto the floodplain at the north tributary of **Orchard Creek**.

Alternative AAC2 crosses **Ingram Slough** approximately 915 m (3,000 ft) west of the existing SR 65. Ingram Slough is not designated as a 100-year floodplain. The City of Lincoln is currently constructing a new bridge on SR 65 at Ingram Slough. The bridge on the existing highway alignment will have a length of 42 m (138 ft). Additionally, the

Union Pacific Railroad is constructing a 40 m (130 ft) trestle immediately west of the existing highway alignment. The November 10, 1999 Hydraulic Evaluation for Advance Planning Study (HEAPS) by the Department's Division of Structures noted that the South Lincoln Master Drainage Plan proposes to split Ingram Slough into two reaches just west of the existing SR 65 alignment. The existing Ingram Slough channel would be abandoned.

The bridge for the south reach of the realigned Ingram Slough will be designed to clear the railroad tracks, the south reach channel and a maintenance roadway. The profile grade over the channel will be approximately 51 m (170 ft). The HEAPS estimates the 100-year BFE at 41 m (135 ft).

The north reach of the realigned Ingram Slough is at a 60-degree skew to the Lincoln Bypass alignment and would require a 91 m (300 ft) long bridge. The proposed profile grade elevation is 44 m (144 ft) compared to an estimated 100-year BFE of 42 m (137 ft).

Alignment AAC2 encroaches on the 100-year floodplain at **Auburn Ravine** in the vicinity of Moore Road for a distance of 320 m (1,050 ft). The floodplain at this location is designated Zone A with no base flood elevations determined. The HEAPS estimates a 100-year BFE of 39 m (128 ft) at the alignment AA crossing. The HEAPS for Auburn Ravine Bridge proposes bridge length of 213.4 m (700 ft). The structure would span Auburn Ravine from bank to bank with a minimum soffit elevation of 39.9 m (131 ft). This elevation would provide 0.9 m (3 ft) of freeboard, as required by the Reclamation Board, over the estimated 100-year BFE of 39 m (128 ft).

Alignment AAC2 encroaches on the 100-year floodplain at the Lower Tributary of **Markham Ravine** in a location approximately 550 m (1,800 ft) south of Nicolaus Road for a distance of 75 m (250 ft). The floodplain at this location is designated Zone AE Floodway, base flood elevations determined. The BFE at this crossing is 38.7 m (127 ft). The designated floodway for the AAC2 crossing at the Lower Tributary of Markham Ravine encompasses the entire width of the Zone AE floodplain boundaries. Any fill encroachment within the floodway would likely result in a greater than 0.3 m (1 ft) increase to the BFE. Additional studies are required if this alignment alternative is selected. Alignment AAC2 encroaches on the 100-year floodplain at Markham Ravine again approximately 335 m (1,100 ft) north of Nicolaus Road for a distance of 21 m (70 ft). The floodplain at this location is designated Zone AE Floodway. The 100-year BFE at this proposed AAC2 crossing is 37.9 m (124.5 ft). The HEAPS proposes a bridge length of 85.3 m (280 ft) for the alignment AAC2 crossing of Markham Ravine. The proposed soffit elevation is 0.9 m (3 ft) or greater than the 100-year BFE.

Alignment AAC2 encroaches on the **Coon Creek** floodplain approximately 550 m (1,800 ft) north of Wise Road for a distance of 640 m (2,100 ft). The floodplain at this location is designated Zone A. The estimated 100-year BFE is 32 m (105 ft) according to the HEAPS. The HEAPS proposes a bridge length of 76m (250 ft) at the C2 alignment crossing.

Alignment AAC2 encroaches on the **Yankee Slough** floodplain in the vicinity of Dowd Road for approximately 213 m (700 ft). The floodplain at this location is designated Zone A. The HEAPS for this alignment recommends a bridge length of 61 m (200 ft) and a minimum soffit elevation of 29 m (95 ft).

It was recommended that the proposed interchange for the Dowd Road / Dalby Road connection be located north of the existing County road intersection to minimize encroachments into the Yankee Slough 100-year floodplain.

Alignment AAC2 crosses an existing **irrigation aqueduct** approximately 488 m (1,60 ft) south of Riosa Road. The aqueduct is the jurisdiction of South Sutter Water District. A review of the proposed crossing by the District Hydraulics Branch in 1994 concluded that a double 3.7 m by 2.1 m (12 x 7 ft) reinforced concrete box culvert would have been required at the aqueduct crossing location.

### **Alternative A5C1**

Alignment A5C1 crosses **Ingram Slough** at a location approximately 915 m (3,000 ft) west of the existing SR 65. Please see the description for the Alignment AAC2 crossing of Ingram Slough as all proposed alignments cross Ingram Slough in close proximity to that alignment.

Alignment A5C1 encroaches on the 100-year floodplain at **Auburn Ravine** in the vicinity of Moore Road for a distance of 305 m (1,000 ft). The floodplain at this location is designated Zone A. The HEAPS for Auburn Ravine Bridge proposes a bridge length of 213 m (700 ft). The structure would have spanned Auburn Ravine from bank to bank with a minimum soffit elevation of 40 m (131 ft). This elevation would provide 0.9 m (3 ft) of freeboard, as required by the Reclamation Board, over the estimated 100-year BFE of 39 m (128 ft).

Alignment A5C1 encroaches on the 100-year floodplain at the **Lower Tributary of Markham Ravine** at a location approximately 490 m (1,600 ft) south of Nicolaus Road for a distance of 183 m (600 ft). The floodplain at this location is designated Zone AE, base flood elevations determined. A HEAPS bridge length estimate is not available for this location. The designated floodway for the A5C1 crossing at the Lower Tributary of Markham Ravine encompasses the entire width of the Zone AE floodplain boundaries.

Any fill encroachment within the floodway would likely result in a greater than 0.3 meter (1 ft) increase to the 100-year BFE.

Alignment A5C1 encroaches on the 100-year floodplain at the **main channel of Markham Ravine** approximately 427 m (1,400 ft) north of Nicolaus Road for 122 m (400 ft). The floodplain at this location is designated Zone AE. The HEAPS proposes a bridge length of 85.3 m (280 ft) at the A5 crossing. The profile grade should be set to allow for minimum freeboard of 0.9 m (3 ft).

Alignment A5C1 encroaches on the **Coon Creek** floodplain approximately 518 m (1,700 ft) north of Wise Road for a distance of 884 m (2,900 ft). The floodplain at this location is designated Zone A. A HEAPS bridge length estimate is not available for the A5C1 crossing location. The adjacent AAC2 crossing 244 m (800 ft) upstream proposes a bridge length of 76.2 m (250 ft). The HEAPS notes that the peak discharge of 594 cubic meters per second ( $\text{m}^3/\text{s}$ ) may not reach this crossing location due to upstream constriction at the existing highway and railroad crossings.

Alignment A5C1 crosses the **Yankee Slough** floodplain at two locations. The alignment encroaches on Yankee Slough approximately 914 m (3,000 ft) south of Dalby Road for a distance of 152 m (500 ft) and again approximately 213 m (700 ft) south of Dalby Road for a distance of 107 m (350 ft). The floodplain at these locations is designated Zone A. A detailed FEMA Flood Insurance Study is not available for Yankee Slough. The estimated 100-year BFE is 27 m (88 ft). A HEAPS bridge length estimate is not available for these crossing locations. The adjacent AAC2 alignment, crossing approximately 274 m (900 ft) upstream of the A5C1 alignment, proposes a bridge length of 61 m (200 ft) for the northerly third of Yankee Slough. If the A5C1 alignment had been selected, additional studies would have been required to determine a bridge length for the southerly crossing of Yankee Slough.

Alignment A5C1 crosses an existing **irrigation aqueduct** approximately 549 m (1,800 ft) south of Riosa Road. The aqueduct is the jurisdiction of South Sutter Water District. A review of the proposed crossing by the District Hydraulics Branch in 1994 concluded that a double 3.7 m by 2.1 m (12 ft x 7 ft) reinforced concrete box culvert would have been required at the aqueduct crossing location.

### **Alternative D1**

Alignment D1 crosses **Ingram Slough** at a location approximately 915 m (3,000 ft) west of the existing SR 65.

Alignment D1 encroaches on the 100-year floodplain at **Auburn Ravine** approximately 792 m (2,600 ft) north of Moore Road for a distance of 396 m (1,300 ft). The floodplain at this location is designated Zone A. The Flood Insurance Study (FIS)

for Auburn Ravine does not include this crossing location. The November 10, 1999 HEAPS does not include recommendations for the D1 alignment crossing of Auburn Ravine, however, the A5C1 and AAC2 alignments, approximately 610 m (2,000 ft) upstream of D1, call for a bridge length of 213.4 m (700 ft). The Reclamation Board requires 0.9 m (3 ft) of freeboard between the 100-year BFE and the bridge soffit.

Alignment D1 encroaches on the 100-year floodplain at **Markham Ravine** in three locations. The floodplain at these locations is designated Zone A. A detailed FIS is not available for this portion of Markham Ravine. Two of the floodplain encroachments occur on the branches of a reservoir within the Markham Ravine watershed. The estimated 100-year BFE at these crossings is 35.8 m (117.5 ft). The third floodplain encroachment is located approximately 548 m (1,800 ft) south of Nicolaus Road for a distance of 122 m (400 ft) across the mainstream channel. The estimated 100-year BFE is 34.3 m (112.5 ft) at the D1 crossing of the mainstream channel. The HEAPS recommendation for the adjacent D13 alignment estimates the bridge length at 129.5 m (425 ft). The HEAPS notes that additional survey data would be required to determine backwater effects.

Alignment D1 encroaches on the 100-year floodplain at **Coon Creek** in the vicinity of Wise Road for a distance of 1,128 m (3,700 ft). The floodplain at this location is designated Zone A. The estimated 100-year BFE of 32.7 m (107.3 ft) per the HEAPS is based on an estimated flow of 594.3 m<sup>3</sup>/s (21,000 cfs). According to the Placer County Flood Control Engineer, the estimated peak discharge for a 100-year event ranges from 311.3 m<sup>3</sup>/s (11,000 cfs) to 594.3 m<sup>3</sup>/s (21,000 cfs) for ultimate build-out of the upstream watershed area. The D1 and D13 alignments cross Coon Creek at the same location. The APS proposes a bridge length of 91.4 m (300 ft) at this crossing. The HEAPS notes that the peak discharge of 594 m<sup>3</sup>/s may not reach the D1 crossing location due to upstream constriction at the existing highway and railroad crossings.

Alignment D1 encroaches on the 100-year floodplain at **Yankee Slough** near the Dalby Road / Dowd Road intersection for a distance of 213 m (700 ft). The floodplain at this location is designated Zone A. The estimated 100-year BFE is 28.0 m (92 ft). Alignments D1 and D13 cross Yankee Slough at the same location. The APS proposes a bridge length of 61.0 m (200 ft) and a minimum soffit elevation of 29.0 m (95 ft). It was recommended that the proposed interchange for the Dowd Road / Dalby Road connections should be located north of the existing County road intersection to minimize encroachments into the Yankee Slough 100-year floodplain.

Alignment D1 crosses **Big Yankee Slough** near the Dalby Road Dowd Road intersection. This crossing is not within the designated floodplain boundaries. The estimated 100-year water surface elevation is 28.0 m (92 ft). Alignments D1 and D13



cross Big Yankee Slough at the same location. The HEAPS proposed a bridge length of 30.5 m (100 ft) and a minimum soffit elevation of 29 m (95 ft).

Alignment D1 crosses an existing **irrigation aqueduct** approximately 549 m (1,800 ft) south of Riosa Road. The aqueduct is the jurisdiction of South Sutter Water District. A review of the proposed crossing by the District Hydraulics Branch in 1994 concluded that a double 3.7 m by 2.1 m (12 ft x 7 ft) reinforced concrete box culvert would have been required at the aqueduct crossing location.

### **Alternative D13 and the D 13 North Modified**

The D 13 North Modified has the same floodplain encroachments as the D 13 alternative.

Proposed alignment D13 crosses **Ingram Slough** approximately 915 m (3000 ft) west of the existing SR 65. Please see the description for the Alternative alignment AA crossing of Ingram Slough as all proposed alignments cross Ingram Slough in close proximity to alignment AA.

Alignment D13 encroaches on the 100-year floodplain at **Auburn Ravine** in the vicinity of Moore Road for a distance of 305 m (1,000 ft). The floodplain at this location is designated Zone A. The HEAPS estimates a 100-year BFE of 39 m (128 ft) at the D13 alignment crossing. The HEAPS proposes a bridge length of 158.5 m (520 ft) and a minimum soffit elevation of 31.7 m (104 ft).

Alignment D13 encroaches on the 100-year floodplain at **Markham Ravine** approximately 914 m (3,000 ft) south of Nicolaus Road for a distance of 91.4 m (300 ft). The floodplain at this location is designated Zone A. The estimated 100-year BFE is 30.8 m (101 ft). The HEAPS proposes a bridge length of 129.5 m (425 ft) and a minimum soffit elevation of 31.7 m (104 ft). The HEAPS advised that additional survey data would be required at Markham Ravine to determine backwater effects. The bridge length could be reduced based on additional studies.

Alignment D13 joins alignment D1 at a location approximately 2,286 m (7,500 ft) south of Wise Road. Please see the D1 alignment descriptions for floodplain encroachment and waterway crossing information north of the D1/D13 convergence.

#### 4.7.1 Summary of Floodplain

Table 4-17 is a summary of the 100-year floodplain encroachment lengths. Figure 4-2 shows the location of these encroachments. The encroachments listed for D13 apply to all the D13 Modified alignments including the Preferred Alternative, D13 North Modified.

**Table 4-17 Summary of 100 year Floodplain Encroachment Lengths**

| Alignment   | Auburn Ravine      | Markham Ravine   | Markham Ravine Lower Tributary | Coon Creek          | Yankee Slough     |
|-------------|--------------------|--|--------------------------------|---------------------|-------------------|
| <b>AAC2</b> | 320 m<br>(1050 ft) | 21 m<br>(70 ft)  | 75 m<br>(250 ft)               | 640 m<br>(2100 ft)  | 213 m<br>(700 ft) |
| <b>A5C1</b> | 305 m<br>(1000 ft) | 122 m<br>(400 ft)  | 183 m<br>(600 ft)              | 884 m<br>(2900 ft)  | 152 m<br>(500 ft) |
| <b>D1</b>   | 396 m<br>(1300 ft) | 91 m, 61 m, & 122m <sup>1</sup><br>(300 ft, 200 ft & 400 ft) | NA                             | 1128 m<br>(3700 ft) | 213 m<br>(700 ft) |
| <b>D13</b>  | 305 m<br>(1000 ft) | 91 m<br>(300 ft)   | NA                             | 1128 m<br>(3700 ft) | 213 m<br>(700 ft) |

<sup>1</sup> Crosses at three locations

Source: Location Hydraulic Study Update (1999)

Alignment D13, with minimization measures, appears to have a low potential for impacts due to floodplain encroachments. The backwater analysis by Caltrans Structures Hydraulics indicates negligible increases to the floodplain base flood elevation at the proposed floodplain crossings. 900 mm equalizer culverts are recommended for the proposed roadway, within the floodplain limits at Coon Creek to minimize any loss of floodplain storage at this location. Equalizer culverts may be placed where terrain permits to reduce the duration and extent of storm water ponding.

With project features such as the bridges shown in Figure 4-2, following the recommended bridge lengths and soffits, and including flood basins as a feature of the project, overall floodplain encroachment would be minimal. Floodplain easements in the vicinity of Wise Road and the proposed project will also alleviate some potential flooding by providing storage for floodwaters during extreme events.

Figure 4-2 Location of Bridges

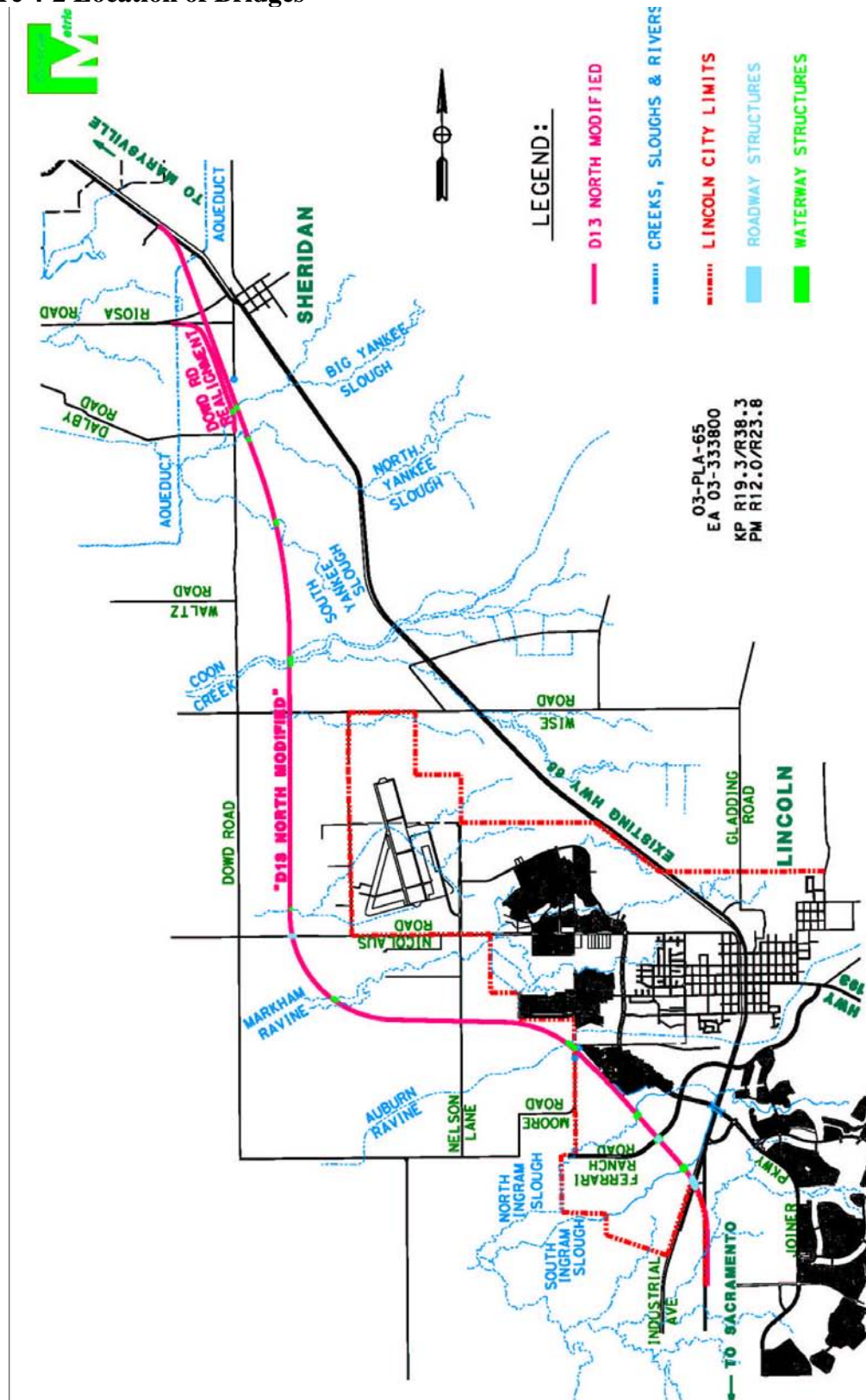
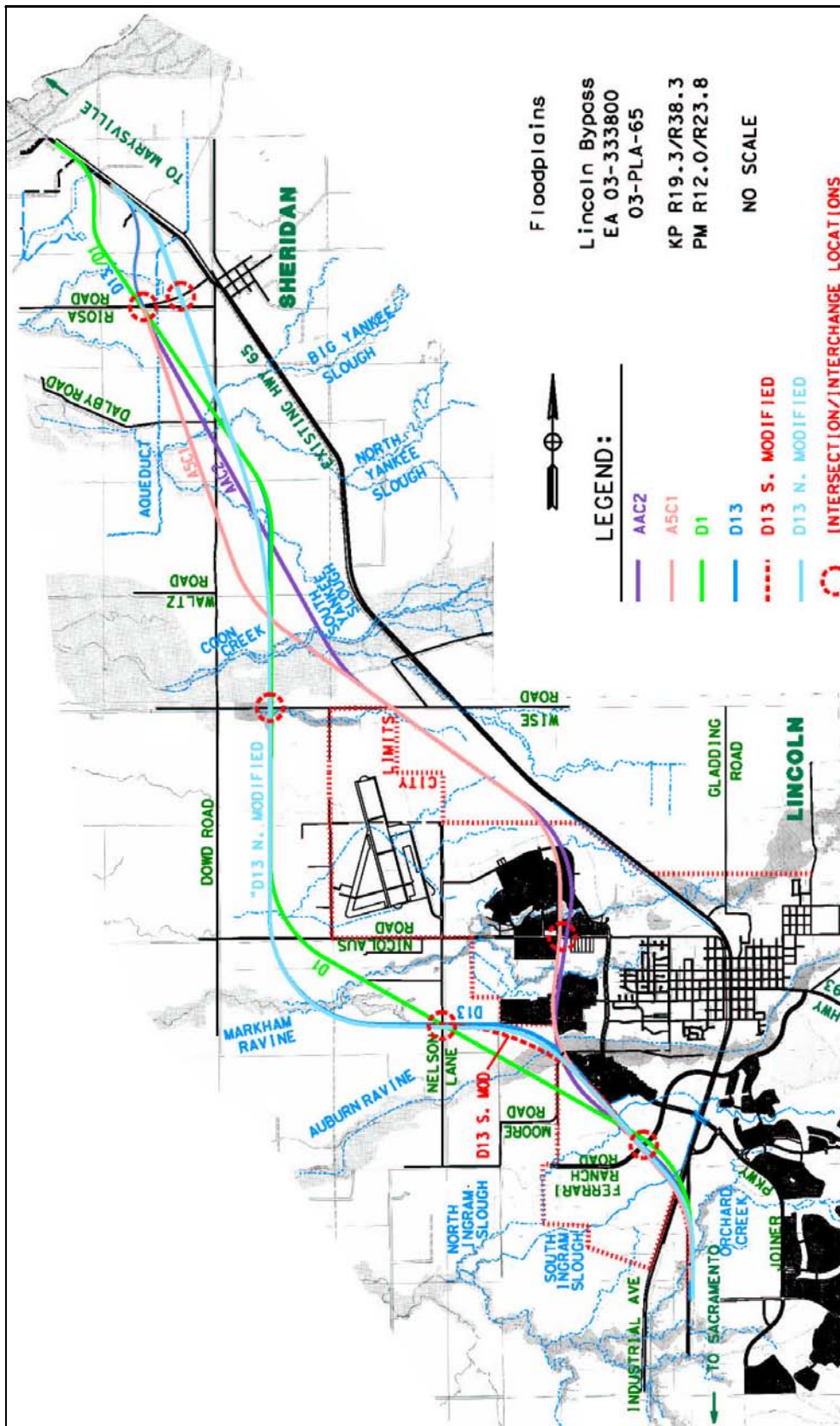


Figure 4-3 Flood Boundary Map



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## 4.8 NATURAL RESOURCES

This section discusses and compares the impacts to biological resources and wetlands that are expected to occur as a result of the proposed project. All impact determinations are based on 76 m (250 ft) wide alignments, except where the development has occurred within this impact area.

For the Draft EIR/S, the measurement of impacts was based upon preliminary highway design. This allowed an equivalent comparison of alternatives without expending too much time refining design for all of the alternatives. Since the LEDPA has been concurred upon, additional design of the LEDPA alternative has occurred, and FWS guidelines on measuring impacts has been applied. Because more design has occurred and these guidelines have been applied to the LEDPA and not the other alternatives, the numbers for the LEDPA can no longer be compared with the numbers for the other alternatives.

Impacts have increased for the preferred alternative, however, those increases would have occurred for all the alternatives if the same design criteria were applied to the other alternatives. These increases in impacts are shown in Section 4.8.7. For the tables that compare alternatives, the impacts to the preferred alternative have not been altered to reflect new design elevation.

After analysis of the range of alternatives, the preferred alternative was approved as the LEDPA (D13 North Modified) and its impacts updated. A Biological Assessment documenting these specific impacts has been prepared and was used for Section 7 consultation with the U.S. Fish and Wildlife Service (FWS) and the National Oceanic and Atmospheric Administration (NOAA) under the Federal Endangered Species Act and coordination with California Dept. of Fish and Game (CDFG) as necessary under the California Endangered Species Act. The Biological Opinion (BO) was issued on February 2, 2005. A request to modify the BO was sent to the FWS in January 2006 and they sent back an amendment to the BO on March 21, 2006.

To initiate the studies, an annotated list of special status plant and wildlife species potentially occurring within the project area was compiled. The list was generated by querying the California Natural Diversity Data Base (CNDDB 1998 and 2003) and California Native Plant Society Electronic Inventory (CNPS) for the Sheridan, Lincoln, Pleasant Grove and Roseville quadrangles, and by obtaining a FWS list of special status species potentially occurring in the project area. Species lists generated through this process are included in Chapter 7, Comments and Coordination. Personnel from FHWA, Caltrans, FWS, NOAA and CDFG were contacted to discuss potential species-related

issues and to review/coordinate survey efforts. Agency staff contacted and the issues discussed are listed in Chapter 7, Comments and Coordination.

### **Park and Ride**

A Park and Ride facility has been proposed for all the alignments as a part of this project. The park and ride facility will be located within the proposed right-of-way of the alignment adjacent to Industrial Avenue and SR 65 intersection. In the initial analysis, braided ramps were included in the park and ride location and the impact footprint was substantially larger due to the braided ramps and the number of parking spaces in the park and ride lot. The braided ramps are no longer a part of this project and the park and ride lot has been reduced; therefore the impacts would have also been reduced substantially if separated out. Originally the park and ride lot was designed to accommodate approximately 1200 cars; however, the footprint for the park and ride has decreased to approximately 6 acres and will accommodate less than the original 1200 cars. The location of the Park and Ride is shown in Figure 2.4.

The footprint for the park and ride facility will be purchased at the time of acquisition for the selected alternative. The proposed park and ride lot will not be constructed until the demand necessitates it and funding is available. The impacts for the park and ride lot have been incorporated into the impacts for the D13 North Modified.

### **4.8.1 Regulatory Requirements**

This section summarizes the responsibilities of key agencies involved in the review of the Natural Environment Study Report (NESR) and related project documents. Coordination with the agencies is also discussed. Copies of correspondence with the agencies are included in Appendix D and E.

#### **U.S. Environmental Protection Agency (EPA)**

EPA has primary responsibility for administration of the Clean Water Act and has oversight authority on 404 permitting issues. EPA has concurred with the project purpose and need and the range of alternatives to be evaluated. EPA provided written agreement that the preferred alternative is the LEDPA on July 9, 2003, and provided a preliminary concurrence on the Mitigation and Monitoring Plan on December 12, 2004.

#### **U.S. Army Corps of Engineers (USACE)**

The USACE is a signatory agency under the NEPA/404 Memorandum of Understanding (MOU) and has concurred with the projects purpose and need and the range of alternatives. Under Section 404 of the Clean Water Act, the USACE regulates the discharge of dredged or fill material into waters of the U.S. A Section 404 permit will be required authorizing the discharge of dredged or fill material associated with roadway construction into vernal pools and other wetlands and regulated waters.

The USACE verified the original wetland delineation for the Study Area in 1991, and has provided direction on updating the delineation and re-verifying the findings. A meeting was held with USACE personnel on March 10, 1998 (Cavanaugh, March 10, 1998) to discuss the possibility of delaying the update and re-verification of wetlands until a preferred alternative was chosen. It was agreed that that approach would be acceptable.

USACE concurred with the LEDPA on August 8, 2003 during the NEPA/404 process and has given concurrence on the Draft Habitat Mitigation and Monitoring Plan (HMMP) on December 27, 2004. Caltrans sent a revised Wetland Delineation to USACE in March 2004 for re-verification. The 404 permit was also submitted to USACE in March for review and comment. Caltrans will need to obtain concurrence on the final HMMP as well as a re-verification of the Wetland Delineation before USACE will issue a permit for the project.

### **U.S. Fish and Wildlife Service (FWS)**

Under the Fish and Wildlife Coordination Act of 1958, Federal agencies are required to coordinate during project planning stages with the FWS and with the State agency responsible for fish and wildlife resources on activities that modify any body of water. Under Section 7 of the Federal Endangered Species Act, Federal agencies are required to consult with FWS on any action that “may affect” a Federally listed threatened or endangered species or designated critical habitat. FWS is also a signatory agency to the NEPA/404 Integration MOU and has concurred with the purpose and need and the range of alternatives evaluated for the project.

FWS will continue to be involved in the project through review of environmental documents, participation in the 404 permitting process and in Section 7 consultation for potential project effects on listed species.

In February 2004, Caltrans began discussing the project and the Section 7 consultation with FWS. During the next several months Caltrans, FHWA and FWS worked towards satisfying the requirements of the Section 7 consultation process. FWS issued a BO on February 2, 2005 (Appendix J). The BO states that the project as described will not jeopardize the continued existence of those species that are impacted by the project. A request to modify the BO was sent to the FWS in January 2006. They sent an amended BO on March 21, 2006.

### **National Oceanic and Atmospheric Administration (NOAA Fisheries)**

Under Section 7 of the Federal Endangered Species Act, Federal agencies are required to consult with NOAA Fisheries on any action that “may affect” a Federally listed threatened or endangered species or designated critical habitat for which NOAA



has responsibility. For this project, NOAA Fisheries has responsibility for reviewing project effects to anadromous fish.

Caltrans submitted a request for Section 7 consultation with NOAA in May of 2004, concurrence on the “not likely to adversely affect” determination on Central Valley Steelhead and Essential Fish Habitat for Pacific Salmon (May 19, 2004) was obtained.

#### **California Regional Water Quality Control Board (RWQCB)**

A Section 401 Water Quality Certification from the Regional Water Quality Control Board is required in conjunction with the Section 404 permitting process. A 401 Certification will be required before the 404 permit is issued. Application to the RWQCB is generally made after the environmental document is complete.

#### **California Department Of Fish and Game (CDFG)**

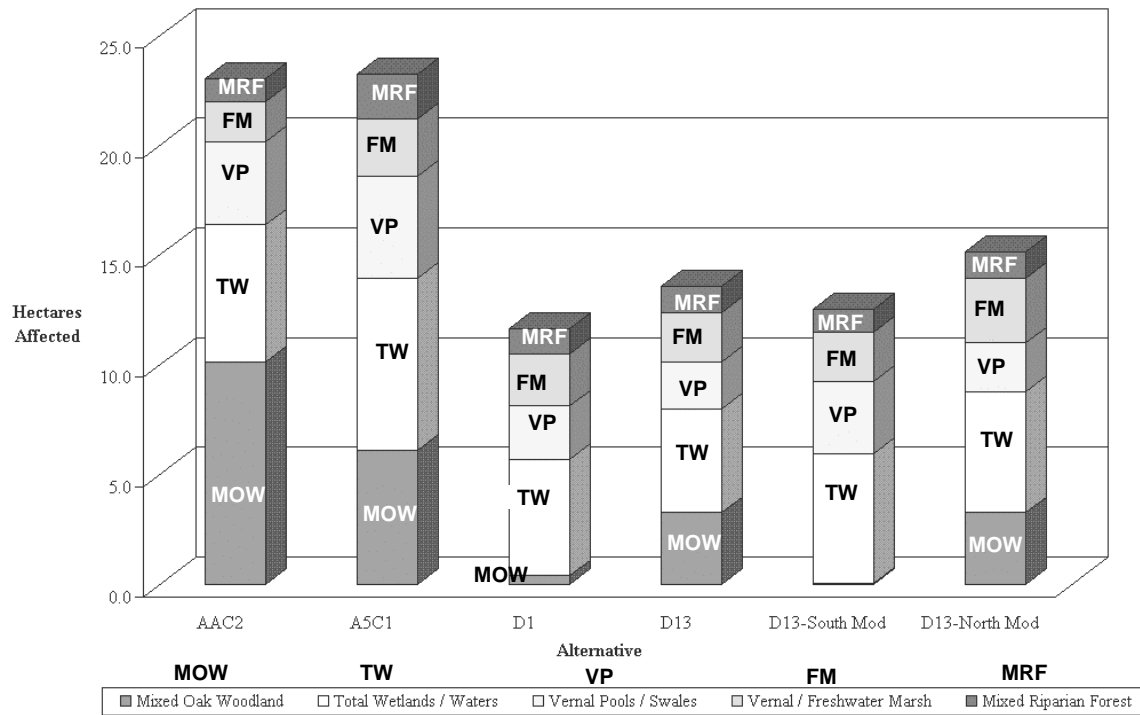
Coordination with CDFG will be necessary under the Fish and Wildlife Coordination Act and under the California Endangered Species Act for potential impacts to State listed species. In addition, a Section 1602 Agreement will be required from CDFG to authorize work in streams and other waterbodies. CDFG have also been involved in the review of project environmental documents and in the 404 permitting process as a reviewing agency on the USACE’s public notice.

#### **Executive Order 11990 Protection of Wetland (May 24, 1977)**

On federally funded projects, impacts on wetlands must be identified in the environmental document. Alternatives that avoid wetlands must be considered. If wetland impacts cannot be avoided, then all practicable measures to minimize harm must be included. This must be documented in a specific “Wetlands Only Practicable Alternative Finding” in the Final Environmental Document. It can be found in Section 4.8.10 of this document.

### **4.8.2 Impacts to Plant Communities**

The potential impacts to plant communities within each alternative are presented in Table 4-18. Figure 3-14 in Chapter 3 shows the plant communities along with the project footprint. The total area of each community type within the project Study Area is also provided for perspective. This information is presented graphically in a bar chart in Figure 4-4.

**Figure 4-4 Comparison of Potential Impacts to Key Resources****Table 4-18 Potential Impacts to Plant Communities Occurring in the Study Area**

| Community                 | Total Within Study Area | A5C1     | AAC2     | D1       |
|---------------------------|-------------------------|----------|----------|----------|
| Developed/Disturbed       | 176.93 ha               | 30.72 ha | 23.43 ha | 14.89 ha |
|                           | 437.2 ac                | 75.9 ac  | 57.9 ac  | 36.8 ac  |
|                           | 8.5 %                   | 15.1%    | 11.9%    | 7.6%     |
| Agricultural Lands        | 873.99 ha               | 52.17 ha | 51.11 ha | 81.67 ha |
|                           | 2159.6 ac               | 128.9 ac | 126.3 ac | 201.8 ac |
|                           | 42.2 %                  | 25.7%    | 26.1%    | 41.7%    |
| Non-native Grassland      | 211.42 ha               | 14.97 ha | 19.83 ha | 18.86 ha |
|                           | 522.4 ac                | 37 ac    | 49.0 ac  | 46.6 ac  |
|                           | 10.2 %                  | 7.4%     | 10.1%    | 9.6%     |
| Mixed Oak Woodland        | 49.37 ha                | 6.11 ha  | 10.16 ha | 0.40 ha  |
|                           | 122.0 ac                | 15.1 ac  | 25.1 ac  | 1.0 ac   |
|                           | 2.4 %                   | 3.0%     | 5.2%     | 0.2%     |
| Mixed Riparian Forest     | 17.85 ha                | 2.06 ha  | 1.05 ha  | 1.3 ha   |
|                           | 44.1 ac                 | 5.1 ac   | 2.6 ac   | 2.8 ac   |
|                           | 0.9 %                   | 1.0%     | 0.5%     | 0.6%     |
| Valley Freshwater Marsh   | 61.47 ha                | 2.23 ha  | 1.34 ha  | 2.06 ha  |
|                           | 151.9 ac                | 5.5 ac   | 3.3 ac   | 5.1 ac   |
|                           | 3.0 %                   | 1.1%     | 0.7%     | 1.1%     |
| Great Valley Willow Scrub | 1.9 ha                  | 0.08 ha  | 0.08 ha  | 0.12 ha  |
|                           | 4.7 ac                  | 0.2 ac   | 0.2 ac   | 0.3 ac   |
|                           | 0.1 %                   | 0.0%     | 0.0%     | 0.1%     |

| Community   | Total Within Study Area | A5C1             | AAC2             | D1               |
|---|-------------------------|------------------|------------------|------------------|
| Grassland / Northern Hardpan Vernal Pool Complex        | 646.43 ha               | 90.73 ha         | 85.67 ha         | 73.82 ha         |
|   | 1597.3 ac               | 224.2 ac         | 211.7 ac         | 182.4 ac         |
|   | 31.2 %                  | 44.7             | 43.7%            | 37.7%            |
| Grassland/Northern Volcanic Mudflow Vernal Pool Complex | 11.9 ha                 | 2.95 ha          | 2.51 ha          | 2.19 ha          |
|   | 29.4 ac                 | 7.3 ac           | 6.2 ac           | 5.4 ac           |
|   | 0.6 %                   | 1.5%             | 1.3%             | 1.1%             |
| Vernal Marsh  | 10.32 ha                | 0.36 ha          | 0.49 ha          | 0.32 ha          |
|   | 25.5 ac                 | .9 ac            | 1.2 ac           | 0.8 ac           |
|   | 0.5 %                   | 0.2%             | 0.2%             | 0.2%             |
| Open Water  | 11.33 ha                | 0.53 ha          | 0.53 ha          | 0.32 ha          |
|   | 28.0 ac                 | 1.3 ac           | 1.3 ac           | 0.8 ac           |
|   | 0.5 %                   | 0.3%             | 0.3%             | 0.2%             |
| <b>Total</b>  | <b>2072.91 ha</b>       | <b>202.92 ha</b> | <b>196.20 ha</b> | <b>195.79 ha</b> |
|   | <b>5122.1 ac</b>        | <b>501.4 ac</b>  | <b>484.8 ac</b>  | <b>483.8 ac</b>  |
|   | <b>100.0 %</b>          | <b>100.0%</b>    | <b>100.0%</b>    | <b>100.0%</b>    |

| Community  | Total Within Study Area | D13       | D13 – Modified South | D13 - Modified North |
|--|-------------------------|-----------|----------------------|----------------------|
| Developed/ Disturbed                             | 176.93 ha               | 16.27 ha  | 18.29 ha             | 18.78 ha             |
|  | 437.2 ac                | 40.2 ac   | 45.2 ac              | 46.4 ac              |
|  | 8.5 %                   | 7.6%      | 8.7%                 | <b>8.7%</b>          |
| Agricultural Lands                               | 873.99 ha               | 102.11 ha | 92.84 ha             | 94.74 ha             |
|  | 2159.6 ac               | 252.3 ac  | 229.4 ac             | 234.1 ac             |
|  | 42.2 %                  | 47.7%     | 44.1%                | <b>44.1%</b>         |
| Non-native Grassland                             | 211.42 ha               | 18.41 ha  | 18.74 ha             | 12.42 ha             |
|  | 522.4 ac                | 45.5 ac   | 46.3 ac              | 30.7 ac              |
|  | 10.2 %                  | 8.6%      | 8.9%                 | <b>5.8%</b>          |
| Mixed Oak Woodland                               | 49.37 ha                | 3.28 ha   | 0.08 ha              | 3.28 ha              |
|  | 122.0 ac                | 8.1 ac    | 0.2 ac               | 8.1 ac               |
|  | 2.4 %                   | 1.5%      | 0.0%                 | <b>1.5 %</b>         |
| Mixed Riparian Forest                            | 17.85 ha                | 1.21 ha   | 1.05 ha              | 1.21 ha              |
|  | 44.1 ac                 | 3.0 ac    | 2.6 ac               | 3.0 ac               |
|  | 0.9 %                   | 0.6%      | 0.5%                 | <b>0.6 %</b>         |
| Valley Freshwater Marsh                          | 61.47 ha                | 2.06 ha   | 2.06 ha              | 1.98 ha              |
|  | 151.9 ac                | 5.1 ac    | 5.1 ac               | 4.9 ac               |
|  | 3.0 %                   | 1.0%      | 1.0%                 | <b>0.9 %</b>         |
| Great Valley Willow Scrub                        | 1.9 ha                  | 0.08 ha   | 0.08 ha              | 0.08 ha              |
|  | 4.7 ac                  | 0.2 ac    | 0.2 ac               | 0.2 ac               |
|  | 0.1 %                   | 0.0%      | 0.0%                 | <b>0.0%</b>          |
| Grassland / Northern Hardpan Vernal Pool Complex | 646.43 ha               | 67.18 ha  | 73.78 ha             | 78.11 ha             |
|  | 1597.3 ac               | 166 ac    | 182.3 ac             | 193.0 ac             |
|  | 31.2 %                  | 31.4%     | 35.1%                | <b>36.4 %</b>        |

| <b>Community</b>  | <b>Total Within Study Area</b> | <b>D13</b> | <b>D13 – Modified South</b> | <b>D13 - Modified North</b> |
|---|--------------------------------|------------|-----------------------------|-----------------------------|
| Grassland/Northern Volcanic Mudflow Vernal Pool Complex | 11.9 ha                        | 2.87 ha    | 2.87 ha                     | 2.87 ha                     |
|   | 29.4 ac                        | 7.1 ac     | 7.1 ac                      | 7.1 ac                      |
|   | 0.6 %                          | 1.3%       | 1.4%                        | <b>1.3%</b>                 |
| Vernal Marsh  | 10.32 ha                       | 0.16 ha    | 0.16 ha                     | 0.97 ha                     |
|   | 25.5 ac                        | 0.4 ac     | 0.4 ac                      | 2.4 ac                      |
|   | 0.5 %                          | 0.1%       | 0.1%                        | <b>0.5 %</b>                |
| Open Water  | 11.33 ha                       | 0.24 ha    | 0.32 ha                     | 0.24 ha                     |
|   | 28.0 ac                        | 0.6 ac     | 0.8 ac                      | 0.6 ac                      |
|   | 0.5 %                          | 0.1%       | 0.2%                        | <b>0.1%</b>                 |
| <b>Total</b>  | 2072.91 ha                     | 213.88 ha  | 210.28 ha                   | 214.69 ha                   |
|   | 5122.1 ac                      | 528.5 ac   | 519.6 ac                    | 530.5 ac                    |

The project may have direct and indirect impacts on special status species and their habitats. Direct effects are defined by the President's Council on Environmental Quality (CEQ) as those effects that are caused by the project or action and occur at the same time and place as the project or action. Indirect effects are caused by the project or action, but occur later in time or are farther removed in distance, but still foreseeable.

Direct effects of this project may include the permanent removal of vegetation and associated wildlife within the construction footprint, as well as temporary effects resulting from construction access and staging. Indirect effects include changes in hydrology (flooding or de-watering), shading (under bridges or adjacent to large fills), increased disturbance and noise, introduction of exotic species, etc. Except for altered hydrology, the potential for indirect effects is generally limited to the area directly adjacent to the new roadway.

Provisions will be made in the project design to allow passage through the project area all critical natural drainage features. Consequently, project effects due to altered hydrology will be minimal except, perhaps, in the direct vicinity of the project footprint.

As shown in Table 4-18, the greatest impacts, regardless of the alternative alignment, are to agricultural lands and annual grassland, with and without vernal pools. These are the most common communities in the project area. The western alignments (D1, D13, D13 South Modified and D13 North Modified) have a proportionately greater impact on agricultural lands, while the eastern alignments (A5C1 and AAC2) have a proportionately greater impact on vernal pool habitats. All alternatives would impact wildlife associated with the affected plant communities. Agricultural land and non-native grasslands (both with and without vernal pools) are the most common habitats, and the extent of wildlife impacts is directly related to the acreage of these habitats affected by each alternative. While there is much less acreage of mixed oak woodland, mixed

riparian forest and valley freshwater marsh within the Study Area, these communities provide higher quality wildlife habitat, generally due to the availability of water and/or greater structural diversity. Further, the more limited extent of these habitats in the Study Area amplifies the importance of project impacts to these habitats. Consequently, impacts to these high quality communities are generally considered more likely to have impacts to wildlife.

Disturbance to wildlife habitat will likely disrupt intra- and inter-specific wildlife interactions, particularly to the less mobile amphibians, reptiles and small mammals. During the initial phases of construction, these less mobile wildlife species may be killed outright, while more mobile species such as birds and larger mammals will be displaced into adjacent habitat that is likely currently occupied, resulting in increased competition and predation pressures on the newly displaced individuals as well as those already present in the habitat. These interactions could lead to increased stress, which in turn could lead to reduced reproduction.

#### **4.8.3 Wildlife Corridors**

Although the riparian communities, particularly along Auburn Ravine and Coon Creek, provide relatively unobstructed wildlife corridors through the Study Area, these corridors are crossed by existing SR 65, the UPTC tracks, and a number of secondary roads and farm roads. Existing SR 65 is immediately adjacent to the UPTC tracks through most of the Study Area, and the main drainage (Auburn Ravine, Markham Ravine, Coon Creek) are conveyed through culverts beneath these features. These culverts have a combined length of up to 61 m (200 ft). Consequently, the SR 65/ UPTC tracks represent an existing hindrance to wildlife movement along the east side of the Study Area.

The new freeway corridor, which will be constructed on a raised road prism, will impede local wildlife movements for several species of amphibians, reptiles and mammals. Movement by smaller, less mobile species may be blocked by the roadway, possibly limiting the availability of resources and hindering dispersal and genetic exchange within populations. More mobile species (e.g., lizards, snakes, skunks, raccoons, ground squirrels, coyotes) may incur increased mortality by attempting to cross the freeway. Culverts will be provided at drainage locations and may provide crossings for wildlife, but are not expected to completely avoid the potential impacts to wildlife movements. However, further consideration regarding culvert characteristics and sizes conducive to wildlife movements will be done as design is finalized. Where feasible, design will incorporate elements that would alleviate wildlife crossing impacts but that do not jeopardize the integrity of the project design.

### **A5C1 and AAC2 Alignments**

These alternatives follow the eastern corridor (on the east side of the airport). As noted previously, this corridor has a proportionately greater percentage of developed/disturbed acreage and less agricultural land than the western corridor. While the impact to non-native grassland is somewhat less with these alternatives, the impact to grassland/vernal pool complex is substantially (73%) greater than with the western alignments. The A5C1 Alignment has the greatest potential impact to mixed riparian forest (2.06 ha [5.1 ac]) of any alternative. Much of this habitat is associated with Coon Creek. This habitat is structurally diverse and represents the highest quality wildlife habitat available in the Study Area. A number of mammal, bird, reptile and amphibian species would potentially be affected, including some special status species. Indirect impacts may also occur due to displacement of more sensitive species away from the highway corridor. The AAC2 alignment crosses Coon Creek further east, where the riparian corridor is much narrower. Consequently, the direct impact 1.05 ha (2.6 ac) and indirect impact to the riparian corridor are reduced.

### **D1 and D13**

These alternatives follow the western alignment (west of the airport) around Lincoln. As noted previously, these alternatives impact much more agricultural land and less developed/disturbed acreage than the A5C1 and AAC2 alignments. While these alternatives would impact a somewhat greater area of non-native grassland, the impacts to grassland/vernal pool complex would be substantially (43%) less. The impacts to mixed oak woodland would also be less. The D1 alignment impacts only 0.40 ha (1.0 ac) of this community, compared with 10.16 ha (25.1 ac) for the AAC2 alignment and 6.11 ha (15.1 ac) for the A5C1 alignment. Marsh impacts are somewhat greater with these alternatives due to the crossing of extensive marsh habitat along Markham Ravine.

The D1 and D13 alternatives will affect wildlife associated with agricultural lands and grasslands (with and without vernal pools) that comprise about 90 percent of the alignment acreage. Impacts to wildlife species associated with woodland and forest habitats would be reduced with these alternatives compared to the eastern alternatives. Marsh impacts are greater with these alignments, and the marsh habitat affected is of particularly high quality, including a high diversity of open water, emergent wetlands and willow scrub habitats. Consequently, impacts to waterfowl and wading birds will likely be greater with these alternatives. Potential impacts to fish and other aquatic species may also be greater with these alignments, during both construction and long term, due to the larger area of aquatic habitat that would be crossed.

### **D13 North and South Modified**

D13 North Modified has similar impacts to most plant communities compared with D13. D13 South Modified avoids the large oak woodland at the southern end of the Study Area; consequently, the impact to oak woodland with the D13 South Modified is reduced by 95% compared with D13 and D13 North Modified. However, the D13 South Modified alignment impacts more vernal pools, marsh and total wetlands than the D1, D13 and D13 North Modified alignment.

#### **4.8.4 Special Status Plants & Animals**

The proposed project may directly impact special status plants. Indirect impacts may also occur. The species potentially affected include Ahart's dwarf rush, Bogg's Lake hedge hyssop, dwarf downingia and legenera. Ahart's dwarf rush and Bogg's Lake hedge-hyssop have only been found in the eastern portion of the Study Area and may be limited to the eastern corridor. The downingia occurs throughout the Study Area. While the legenera has not been observed, it is likely to occur. For purposes of comparing alternatives, it is assumed that Ahart's dwarf rush and Bogg's Lake hedge hyssop are more likely to be present within the A alignments, while dwarf downingia and legenera are equally likely to be present in all alignments. These are all vernal pool plants; thus, the potential for impacts is directly related to the extent of vernal pool impacts within an alignment. The greatest potential for vernal pool impacts is with the AAC2 and A5C1 alignments. Consequently, the greatest potential impact to special status plant species would also result from alternatives AAC2 and A5C1.

The preferred alternative (D13 North Modified) had less impact to vernal pools, 1.78 ha (4.4 acres) when compared to AAC2 and A5C1, 3.44 ha (8.5 acres) and 4.29 ha (10.6 acres) respectively. Impacts to these special status plants can be mitigated through minimization of vernal pool impacts in the final alignment routing and through preservation and re-creation of appropriate habitat to a less than significant impact per CEQA.

### **Wildlife**

#### ***Mammals***

The project may potentially affect a number of protected wildlife species. Several special status bat species (greater western mastiff bat, small-footed myotis, long-eared myotis, fringed myotis, long-legged myotis, Yuma myotis, pale big-eared bat and Townsend's western big-eared bat) may potentially occur in the Study Area based on the availability of suitable habitat. These bats may use trees and/or buildings and other structures (e.g., bridges) for roosting and may forage over a variety of habitats in the Study Area. Alternatives that impact large numbers of trees (e.g., AAC2) and buildings



and other structures would have greater potential to impact bats. Pre-construction surveys will be required to accurately assess the potential for impacts to bats. Impacts can be minimized through timing of construction, excluding bats from structures and minimizing impacts to potential roost sites.

The San Joaquin pocket mouse is a federal species of concern. It is not listed as threatened or endangered. This species occurs in grasslands and oak savanna habitats with friable soils. San Joaquin pocket mice were not observed in the study area. Implementation of proposed avoidance and minimization measures to minimize impacts to oak woodlands and other habitats would reduce potential impacts to this species.

### ***Birds***

A number of special status bird species are known to occur in the Study Area and may be affected by the project. Forest and woodland areas provide habitat for Cooper's hawk, sharp-shinned hawk and Swainson's hawk. Habitat for northern harrier, burrowing owl, tricolored blackbird, California horned lark, grasshopper sparrow and lark sparrow occurs throughout the Study Area. Habitat for double-crested cormorant, white-faced ibis and American bittern occurs along Markham Ravine and other locations. Nests or nesting behavior has been observed for several of these species. Foraging habitat for prairie falcon, golden eagle, mountain plover and ferruginous hawk also occurs in the Study Area.

The project will directly eliminate foraging and/or nesting habitat used by these species. The AAC2 alignment, which had the highest potential impacts of 10.16 ha (25.1 ac) mixed oak woodland, may impact nesting and/or foraging habitat for Cooper's, sharp-shinned and Swainson's hawks. The western alignments (D1 and D13 and D13 North Modified and D13 South Modified) affect the largest acreage of agricultural land, grassland, riparian forest and marsh; consequently, these alternatives would potentially have greater impacts to special status bird species.

Pre-construction surveys of the selected alignment are required in order to accurately determine the potential for impacts to special status bird species. In addition to avoidance of key habitat and habitat preservation, construction timing will help mitigate potential impacts.

### ***Swainson's Hawk***

The Swainson's hawk is a threatened species under the California Endangered Species Act (CESA). The primary reason for the decline of this species, as with other raptors, is thought to be agricultural conversion of native habitats, primarily grassland and riparian forest. This species requires fields or grasslands for foraging and breeds in stands with few trees in juniper-sage flats, riparian areas and oak savanna.

Swainson's hawk nesting habitat in, and in the vicinity of, the project area consists of the taller trees in the Coon Creek, Auburn Ravine and Pleasant Grove Creek riparian corridors. More than 80% of the total project area is suitable foraging habitat for the hawk, which consists for the most part of agricultural lands (active and fallow) and grasslands. At least eight different Swainson's hawks were observed within the project area and a 16.1 km (10 mi) radius. The observations included one pair of hawks constructing a nest and a second pair exchanging prey, indicating the establishment of a territory. At least three of the hawks were observed within the Study Area, including one of the pairs. The combination of extensive foraging habitat adjacent to several suitable riparian nesting sites makes the Study Area highly suitable for this species.

Potential impacts to this species from the proposed project include direct loss of up to 160 ha (400 ac) of foraging habitat, with additional indirect effects due to disturbance along the highway corridor. Given the high value of the nesting and foraging habitat within the project area and the increasing urbanization of the nearby Lincoln area, this is a potentially significant impact under CEQA.

Mitigation for impacts was determined using guidance from DFG guidelines for determining mitigation. Mitigation includes preserving 400 acres of existing grassland habitat in the vicinity of the project through fee title or conservation easement depending on extent of active management. The mitigation described above and additional avoidance and minimization measures for potential impacts to Swainson's hawk foraging habitat will reduce impacts to less than significant under CEQA.

### ***Reptiles***

Special status reptiles observed or expected to occur in the natural environment Study Area (Study Area) include the northwestern pond turtle and California horned lizard. Potential impacts to pond turtles will be greatest with the western alignments that remove more aquatic habitat. The horned lizard occurs in a variety of habitat types; consequently, potential impacts to this species are generally related to the overall acreage of habitat impacted.

### ***Amphibians***

The special status amphibians potentially occurring in the Study Area are the western spadefoot toad and the California red-legged frog. Spadefoots occupy a variety of lowland habitats, and potential impacts to this species are related to the overall acreage of habitat impacted by the selected alignment.

Red-legged frogs inhabit lowlands and foothills in or near permanent sources of deep water. The frog prefers ponds or creeks with extensive shoreline vegetation but will

disperse 1.6 km (1 mi) or more during or after rain events. Although suitable habitat for the California red-legged frog exists in the project area, due to the presence of non-native predators (i.e., bullfrog, crayfish, largemouth bass etc.) this species is not expected to occur.

### ***Fish***

Federal candidate fall-run Chinook salmon were observed in low numbers in Auburn Ravine, Coon Creek and Ingram Slough. The federally threatened Central Valley steelhead may also occur in similar habitat in the project area. Both of these species are under the jurisdiction of NOAA Fisheries. Pacific lampreys have been observed and the river lamprey could potentially occur; these are both species of special concern.

Bridge construction activities will occur within the live stream at both Coon Creek and Auburn Ravine and Ingram Slough. The existing open channel at these bridge locations will be restricted to culverts during the construction period, forcing fish to move through the culvert pipes. Temporary impacts include the potential loss of 1.52 ha (3.76 ac) of woody riparian and shaded riverine aquatic (SRA) habitat and 0.06 ha (0.15 ac) of open water. There will also be a permanent loss of 0.69 ha (1.70 ac) of woody riparian and SRA habitat for Central Valley steelhead and Central Valley fall-run Chinook salmon.

The following avoidance and minimization measures are proposed to offset any effects to these species or their habitat. Bridges or culverts are proposed for the stream crossings where the species are likely to occur. In stream work will be limited to the period between June 1 and October 31 when fish are least likely to be present in the project area so as not to block migration or otherwise impede fish movements. Revegetation of construction areas following the completion of bridge construction will offset the loss of SRA habitat. In addition, the shading of the streams by the bridge structures and off-site preservation and restoration of SRA habitat will further minimize the loss of SRA. Erosion and siltation best management practices will be implemented to avoid habitat degradation.

A "may affect, not likely to adversely affect" determination for the threatened Central valley steelhead under Section 7 of the Endangered Species Act was made by Caltrans. In addition, Caltrans determined that the project would "not adversely affect" any Essential Fish Habitat pursuant to the provisions of the Magnuson-Stevens Fishery Conservation and Management Act (MSA). These determinations were submitted to NOAA Fisheries on May 10, 2004 and a concurrence letter was received from NOAA on May 19, 2004.

### *Chinook Salmon*

The federally threatened Central Valley steelhead and federal candidate Central Valley fall-run chinook salmon are likely to occur in the project area. Streams likely to support these species include Coon Creek and Auburn Ravine. Ingram Slough does not provide spawning habitat for this species in the project area or upstream of the project area. Although the project area lacks suitable spawning habitat for these species, suitable spawning habitat does occur upstream and fish may pass through the project area during migration.

Juvenile fall-run/late fall-run chinook salmon have been observed in low numbers in the project area in Auburn Ravine, Coon Creek and Ingram Slough. The previous NES reported that these fish were most likely surplus fingerlings planted by CDFG. It is documented that CDFG planted surplus fingerlings in drainages within the project area in an attempt to maximize natural rearing habitat. The reaches of the drainages that flow through the project area do not contain suitable spawning habitat for fall-run/late fall-run salmon but upstream reaches of Auburn Ravine and Coon Creek contain potential spawning habitat. In addition, drainage and tributaries within the project area could provide non-natal rearing habitat for salmon fry in early stages of development.

### *Central Valley Steelhead*

Although not observed in the Study Area during previous surveys, Central Valley steelhead could potentially utilize upstream reaches of Auburn Ravine and/or Coon Creek as spawning habitat. In addition, drainage and tributaries within the project area could provide non-natal rearing habitat for steelhead fry in early stages of development.

Potential project-related impacts to steelhead would be similar to those for chinook salmon.

### *Invertebrates*

The Federally listed vernal pool fairy shrimp (vpfs) and vernal pool tadpole shrimp (vpts) have been recorded in the project area or immediate vicinity and are assumed to be present within all alignments. California linderiella also occur in vernal pools in the study area. These species are generally restricted to vernal pools; thus, alternatives with greater potential impacts to vernal pools (A5C1 and AAC2) will likely have greater impact to these invertebrates. Because all alignments impact vernal pools, it is not possible to avoid impacting these species. Mitigation in accordance with FWS guidelines is required.

Due to the length of the corridor and distribution of pools in the project area, it is not possible to completely avoid vernal pool impacts. Eight vernal pool complexes were

previously identified within the study area based on geographic and hydrologic connectivity. All of the alignments evaluated cross six of these eight complexes. The complexes range from small, disturbed units completely surrounded by existing development to large, diverse units including tracts of undisturbed, high quality and high-density pools. The project will directly impact vernal pools that provide potential habitat for VPFS and VPTS, and the presence of both species is inferred in these habitats.

Indirect impacts to listed invertebrates may also occur outside of the project alignment due to altered pool hydrology. Contributing watershed, while not necessarily critical to the volume of water available to a pool, may play an important role in water level dynamics. Substantial loss of watershed may result in fluctuating water levels during the winter that could affect both plant and invertebrate populations within the pool (Hanes and Stromberg 1996). Effects are further limited to pools and swales that are down slope from the roadway alignment.

The D13 North Modified alternative will have a direct impact to 10.90 ha (26.94 ac) of vernal pools/swales and an indirect impact of 5.49 ha (13.56 ac) to vernal pools/swales. These revised impacts were submitted to FWS in a supplement to the Biological Assessment (BA). The BA concluded that the project would have an adverse effect on the VPFS and VPTS. The FWS concurred and responded with their Biological Opinion, which states that with the implementation of the proposed mitigation measures that are described in Section 4.8.8 of this document, the project will not likely jeopardize the continued existence of the VPFS and VPTS. The project will still cause direct take of the species, which has been authorized by the FWS as a result of the completed Endangered Species Act consultation. With the implementation of the mitigation measures listed in the Biological Opinion, the project will have a less than significant impact on these listed vernal pool species.

#### *Critical Habitat for Vernal Pool Fairy Shrimp (VPFS) and Vernal Pool Tadpole Shrimp (VPTS)*

Critical habitat was designated for the VPFS and VPTS on August 6, 2003. VPFS critical habitat extends as far north as Jackson County, Oregon, and as far south as Ventura County, California. There are 32 units of critical habitat mapped for this species. Most of the vernal pools in the study area are within designated critical habitat for VPFS (Unit 12) and most of the project impacts to vernal pools and swales within the preferred alignment (D13 North Modified) affect critical habitat for this species.

Designated critical habitat for VPTS extends from Shasta County, California at the northern extent to Kings County and Tulare County, California at the southern end. No critical habitat for this species is designated within the project area, nor within Placer

County. The critical habitat areas for this species closest to the project area are south of the city of Sacramento in Sacramento County, and a small polygon designated in Yuba County, east of Marysville. Construction of the project will not impact critical habitat for VPTS.

#### *Valley Elderberry Longhorn Beetle (VELB)*

There are a number of recent records for VELB (i.e., positive identification of exit holes) in the project vicinity, including records from Roseville and Rocklin, about 16 km (10 miles) south of the project area, and from the Bear River, immediately north of the project area.

VELB may occur in the project area, although the beetle's host plant, elderberry, is not common in the project area and no signs of beetles (exit holes) have been recorded in the project study area.

Two areas along the American River in the Sacramento metropolitan area were designated as critical habitat for VELB. In addition, an area along Putah Creek in Solano County, and the area east of Nimbus Dam on the American River in Sacramento County, is identified as important habitat for the recovery of the species. The study area is not located within critical habitat for VELB.

Potential project related impacts to VELB are limited to direct impacts to elderberry plants during project construction. Indirect impacts are not expected to occur as no other plants were observed along the project alignment.

The project will affect two elderberry plants occurring in a clump with 10 stems of sufficient size (>1 inch diameter at ground level) to provide habitat for VELB. The elderberry plants are both located along an old breakout channel of Auburn Ravine. No exit holes were observed on either plant. Although this area is away from the active stream channel, and in an area classified as woodland habitat, per FWS guidelines, these plants are classified as riparian.

A BA was submitted to the FWS for impacts to the VELB in April 2004. The BA concluded that the project would potentially have a direct impact on the VELB. The FWS concurred in a BO and further stated that with the implementation of the mitigation measures spelled out in the BA, and discussed in Section 4.8.8, the project would not likely jeopardize the continued existence of the VELB. The BO also contained authorization for incidental take of the insect. With the implementation of the mitigation measures described in Section 4.8.8, the project will have a less than significant effect on the VELB under CEQA.

#### 4.8.5 Impacts to Key Resources

Table 4-19 provides a side-by-side comparison of the impacts to key resources associated with each of the six alternatives. Figure 4-4 on page 4-68 provides a graphical presentation of this same information. As the table and figure show, none of the alternatives is obviously superior in terms of the impacts to key resources. These resources are broadly distributed throughout the project corridor and none of the alignments minimizes impacts to all resources.

In addition to project impacts on biological resources, another factor that must be considered in evaluating alternatives is the effectiveness of available avoidance and minimization measures in offsetting project-related losses. It is not possible to fully offset impacts to mixed oak woodland and mixed riparian forest, regardless of the avoidance and minimization measures employed since many of the trees are over 100 years old, and development of mature riparian forest requires decades. Young trees can be planted and, over time, viable habitat will develop. However, the temporal loss of habitat value while the trees grow and the habitat structure develops cannot be directly offset. Vernal pool impacts may also be difficult to offset due, in part, to the high probability of special status species being present. In comparison, freshwater marsh impacts are relatively easy to offset. Consequently, impacts to oak woodlands, riparian forest and vernal pool habitats should be viewed as more important than impacts to freshwater marsh.

**Table 4-19 Comparison of Direct Impacts to Key Resources**

| Alignment   | Natural Communities  | Wetlands / Waters   | Summary   |
|-------------|--|---|---|
| <b>A5C1</b> | 93.68 ha (231.5 acres) grasslands containing vernal pools<br>2.06 ha (5.1 acres) riparian forest<br>6.11 ha (15.1 acres) oak woodland  | 7.85 ha (19.4 acres) wetlands/waters<br>4.656.5 ha (11.5 acres) vernal pools/swales<br>2.59 ha (6.4 acres) of marsh<br>Two high value vernal pool complexes | Greatest total wetland, vernal pool, grassland w/ vernal pools and riparian forest impacts of any alternative             |
| <b>AAC2</b> | 88.18 ha (217.9 acres) grasslands containing vernal pools<br>1.05 ha (2.6 acres) riparian forest<br>10.16 ha (25.1 acres) oak woodland | 6.23 ha (15.4 acres) wetlands/waters<br>3.80 ha (9.4 acres) vernal pools/swales<br>1.83 ha (4.5 acres) of marsh<br>Two high value vernal pool complexes     | Less impact to riparian forest, total wetlands and vernal pools than A5C1; large impact to oak woodlands                  |
| <b>D1</b>   | 76.01 (187.8 acres) grasslands containing vernal pools<br>1.13 ha (2.8) riparian forest<br>0.4 ha (1.0 acre) oak woodland              | 5.30 ha (13.1 acres) wetlands/waters<br>2.43 ha (6.0 acres) vernal pools/swales<br>2.38 ha (5.9 acres) of marsh<br>One high value marsh                     | Less impact to vernal pool grasslands, vernal pools and total wetlands than AAC2 and A5C1. Small impact to oak woodlands. |



| Alignment                                     | Natural Communities   | Wetlands / Waters  | Summary   |
|---|---|--|---|
| <b>D13</b>                                    | 70.05 ha (173.1 ac) grasslands containing vernal pools<br>1.21 ha (3.0 ac) riparian forest<br>3.28 ha (8.1 ac) oak woodland | 4.73 ha (11.7 ac) wetlands/waters<br>2.14 ha (5.3 ac) vernal pools/swales<br>2.22 ha (5.5 ac) of marsh<br>One high value marsh | Comparable to D1 except for greater impact to oak woodlands, less impact to vernal pools.                               |
| <b>D13 Mod. South</b>                         | 76.65 ha (189.4 ac) grasslands containing vernal pools<br>1.05 ha (2.6 ac) riparian forest<br>0.08 ha (0.2 ac) oak woodland | 5.91 ha (14.6 ac) wetlands/waters<br>3.28 ha (8.1 ac) vernal pools/swales<br>2.22 ha (5.5 ac) of marsh<br>One high value marsh | Greatest impact to wetlands and vernal pools of any D alternative. Smallest impact to oak woodlands of any alternative. |
| <b>D13 Mod. North - Preferred Alternative</b> | 80.98 ha (200.1 ac) grasslands containing vernal pools<br>1.21 ha (3.0 ac) riparian forest<br>3.28 ha (8.1 ac) oak woodland | 5.5 ha (13.6 ac) wetlands/waters<br>2.23 ha (5.5 ac) vernal pools/swales<br>2.95 ha (7.3 ac) of marsh<br>One high value marsh  | Impacts comparable to D13 except for greater impact to grassland/vernal pool complex.                                   |

**Table 4-20 Preferred Alternative Revised Impacts**

| D13 North Modified            | Wetlands/ Non-wetland Waters  | Natural Communities Wildlife, Fisheries   | Water Quality                                       | Agricultural Land     |
|-------------------------------|---|---|---|-----------------------|
| Direct Impacts                | 0.11 ha (0.26 ac) non - wetlands/waters<br>10.9 ha (26.9 ac) vernal pools/swales<br>6.54 ha (16.15 ac) of vernal and freshwater marsh | 0.01 ha (0.02 ac) willow scrub<br>17.13 ha (42.33 ac) non-native grassland<br>113.49 ha (280.43 ac) grassland northern hardpan vernal pool complex<br>1.65 ha (4.07 ac) grassland/northern volcanic mudflow vernal pool complex<br>0.69 ha (1.70 ac) mixed riparian forest<br>5.35 ha (13.22 ac) mixed oak woodland<br>9.55 ha (23.59 ac) vernal pool fairy shrimp critical habitat | 333.1 ha (823 ac) footprint with 9 stream crossings | 157.19 ha (388.40 ac) |
| Indirect Impacts <sup>1</sup> | 8.5 ha (21.0 ac) vernal pools/swales  | 6.93 ha (17.12 ac) vernal pool fairy shrimp critical habitat  | 377.2 ha (932 ac) footprint                         |                       |

<sup>1</sup> Indirect impacts were determined based upon USFWS guidelines and in cooperation during Section 7 consultation

#### 4.8.6 Jurisdictional Waters

The wetlands delineation was completed in 1994, and verified by the USACE. (See Chapter 7, Comments and Coordination) After discussion with the USACE, it was agreed that for the purposes of comparison of the alternatives, the 1994 delineation would be used (Personal communication, Cavanaugh, March 10, 1998). An additional wetland verification was completed and submitted to USACE for approval and verification in March 2004. The proposed project will impact wetlands and other waters subject to regulation by the USACE and/or CDFG.

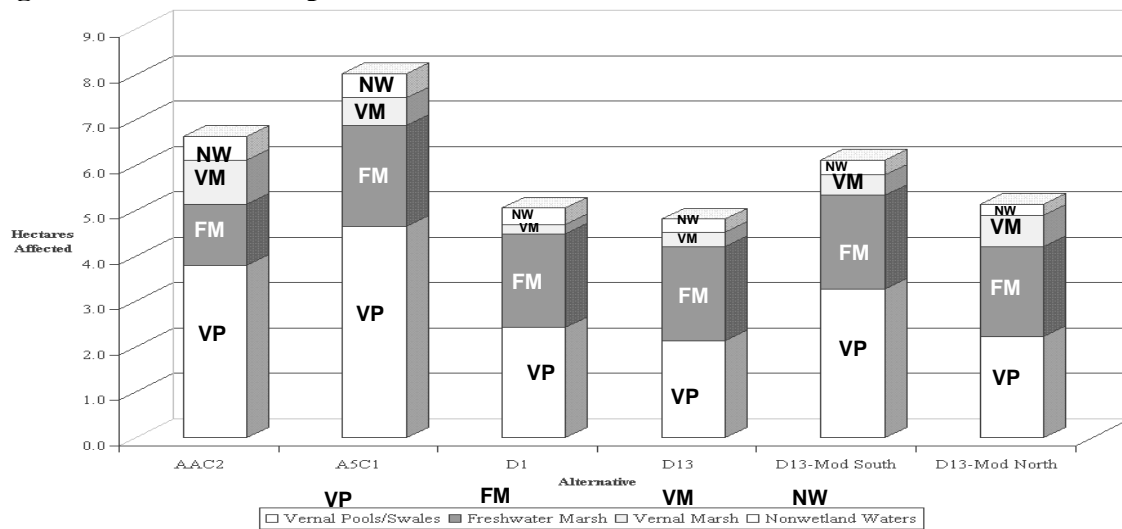
Impacts to wetlands and other jurisdictional waters within each alternative alignment are presented in Table 4-21. The table shows acreage of each wetland type

within each alternative alignment. The total acreage of jurisdictional waters within the project area is also provided for comparison.

Figure 4-5 provides a graphical presentation of the impacts to USACE jurisdictional waters with each project alternative. Figure 3-18 in Chapter 3, shows an aerial with the wetlands marked along with an overlay of the proposed project.

**Table 4-21 Impacts to Jurisdictional Waters Occurring in the Study Area**

| <b>USACE Wetlands</b>                    | <b>Total Within Study Area</b> | <b>A5C1</b>     | <b>AAC2</b>     | <b>D1</b>       | <b>D13</b>      | <b>D13 - Mod. South</b> | <b>D13 - Mod. North (Preferred Alternative)</b> |
|--|--------------------------------|-----------------|-----------------|-----------------|-----------------|-------------------------|---|
| Willow Scrub                             | 1.90 ha                        | 0.08 ha         | 0.08 ha         | 0.12 ha         | 0.08 ha         | 0.08 ha                 | 0.08 ha   |
|  | <i>4.70 ac</i>                 | <i>0.20 ac</i>  | <i>0.20 ac</i>  | <i>0.30 ac</i>  | <i>0.20 ac</i>  | <i>0.20 ac</i>          | <i>0.20 ac</i>                                  |
| Freshwater Marsh                         | 61.47 ha                       | 2.23 ha         | 1.34 ha         | 2.06 ha         | 2.06 ha         | 2.06 ha                 | 1.98 ha   |
|  | <i>151.90 ac</i>               | <i>5.50 ac</i>  | <i>3.30 ac</i>  | <i>5.10 ac</i>  | <i>5.10 ac</i>  | <i>5.10 ac</i>          | <i>4.90 ac</i>                                  |
| Vernal Marsh                             | 10.32 ha                       | 0.36 ha         | 0.49 ha         | 0.32 ha         | 0.16 ha         | 0.16 ha                 | 0.97 ha   |
|  | <i>25.50 ac</i>                | <i>0.90 ac</i>  | <i>1.20 ac</i>  | <i>0.80 ac</i>  | <i>0.40 ac</i>  | <i>0.40 ac</i>          | <i>2.40 ac</i>                                  |
| Vernal Pool                              | 31.24 ha                       | 4.29 ha         | 3.44 ha         | 2.06 ha         | 1.74 ha         | 2.87 ha                 | 1.78 ha   |
|  | <i>77.20 ac</i>                | <i>10.60 ac</i> | <i>8.50 ac</i>  | <i>5.10 ac</i>  | <i>4.30 ac</i>  | <i>7.10 ac</i>          | <i>4.40 ac</i>                                  |
| Vernal Swale                             | 2.87 ha                        | 0.36 ha         | 0.36 ha         | 0.36 ha         | 0.40 ha         | 0.40 ha                 | 0.45 ha   |
|  | <i>7.10 ac</i>                 | <i>0.90 ac</i>  | <i>0.90 ac</i>  | <i>0.90 ac</i>  | <i>1.00 ac</i>  | <i>1.00 ac</i>          | <i>1.10 ac</i>                                  |
| <b>Total USACE Wetlands</b>              | 107.81 ha                      | 7.33 ha         | 5.71 ha         | 4.94 ha         | 4.45 ha         | 5.58 ha                 | 5.26 ha   |
|  | <i>266.40 ac</i>               | <i>18.10 ac</i> | <i>14.10 ac</i> | <i>12.20 ac</i> | <i>11.00 ac</i> | <i>13.80 ac</i>         | <i>13.00 ac</i>                                 |
| <b>USACE Waters of U.S.</b>              | 11.33 ha                       | 0.53 ha         | 0.53 ha         | 0.36 ha         | 0.28 ha         | 0.32 ha                 | 0.24 ha   |
|  | <i>28.00 ac</i>                | <i>1.30 ac</i>  | <i>1.30 ac</i>  | <i>0.90 ac</i>  | <i>0.70 ac</i>  | <i>0.80 ac</i>          | <i>0.60 ac</i>                                  |
| <b>Total USACE Jurisdictional Waters</b> | 119.14 ha                      | 7.85 ha         | 6.23 ha         | 5.3 ha          | 4.73 ha         | 5.91 ha                 | 5.50 ha   |
|  | <i>294.40 ac</i>               | <i>19.40 ac</i> | <i>15.40 ac</i> | <i>13.10 ac</i> | <i>11.70 ac</i> | <i>14.60 ac</i>         | <i>13.6 ac</i>                                  |
| <b>CDFG Jurisdictional Waters</b>        | 92.55 ha                       | 4.90 ha         | 2.99 ha         | 3.68 ha         | 3.64 ha         | 3.52 ha                 | 3.52 ha   |
|  | <i>228.7 ac</i>                | <i>12.10 ac</i> | <i>7.40 ac</i>  | <i>9.10 ac</i>  | <i>9.00 ac</i>  | <i>8.70 ac</i>          | <i>8.70 ac</i>                                  |

**Figure 4-5 Potential Impacts to USACE Jurisdictional Waters**

CDFG jurisdiction excludes vernal pools and other wetland features that are not part of a stream or lake; however, riparian habitat, freshwater marsh, willow scrub and open water habitats are included in CDFG jurisdiction.

As shown in the preceding table and figure, all alignments impact jurisdictional waters, including wetlands. The eastern corridor alternatives impact a proportionately greater area of vernal pools and swales, including the high value vernal pool complex west of the clay pits identified in the Wetland Value Assessment (Chapter 3, Wetlands/Jurisdictional Waters Assessment). The western corridor alternatives impact slightly more marsh habitat, including the high value marsh complex along the east end of Markham Ravine identified in the Wetland Value Assessment. Overall, the impacts to jurisdictional waters are greater with the eastern corridor alternatives, and particularly the A5C1 alignment, which affects more jurisdictional waters than the next highest impacting alternative, AAC2.

#### **4.8.7 Updated Impacts to Plant Communities for D13 North Modified (Preferred Alternative)**

Impacts were calculated based upon preliminary design information to provide a basis for comparison of the alternatives. After receiving the LEDPA concurrence from EPA and USACE, impacts were calculated for the preferred alternative considering refined design and using the 250 foot buffer around vernal pools recommended by the FWS. The revised impacts are listed in Table 4-22. All of the other alternatives, if chosen as the LEDPA; would have similar increased impacts to resources with these revisions. Therefore, the conclusion that D13 North Modified is the LEDPA has not changed.

The increase in impacts is due to revised design information that was applied to the LEDPA and the application of FWS guidelines and recommendations regarding direct and indirect impacts. Initially the impacts of vernal pools were calculated as follows; if a vernal pool was partially within the project footprint and partially outside of the footprint, the portion that was within the direct project impact area was calculated as being directly impacted and the area outside of the project footprint was calculated as indirectly impacted. In addition, anything that was within a 250-foot corridor on either side of the project limits was calculated as being indirectly impacted (according to FWS guideline interpretation). However, after this original impact calculation was submitted to FWS, FWS during the Section 7 consultation requested that the calculations be revised to meet their interpretation of the guidelines. Therefore, any vernal pool that is partially impacted by the project is now considered directly impacted and vernal pools that are considered hydrologically connected per FWS are now considered indirectly impacted even if they are beyond the original 250-foot indirect corridor area.

**Table 4-22 Revised Impacts to Plant Communities Occurring in the Study Area**

| Community   | Total Within Study Area | Original D13-Modified North | Revised D13 - Modified North (Preferred Alternative) |
|---|-------------------------|-----------------------------|--|
| <b>Developed/<br/>Disturbed</b>                         | 176.93 ha               | 18.78 ha                    | 30.82 ha   |
|   | 437.2 ac                | 46.40 ac                    | 76.15 ac   |
|   | 8.5 %                   | 8.75%                       | 9.26%  |
| <b>Agricultural Lands</b>                               | 873.99 ha               | 94.74 ha                    | 157.19 ha  |
|   | 2159.6 ac               | 234.10 ac                   | 388.40 ac  |
|   | 42.2 %                  | 44.13%                      | 47.21%   |
| <b>Non-native Grassland</b>                             | 211.42 ha               | 12.42 ha                    | 17.13 ha   |
|   | 522.4 ac                | 30.70 ac                    | 42.33 ac   |
|   | 10.2 %                  | 5.79%                       | 5.15%  |
| <b>Mixed Oak Woodland</b>                               | 49.37 ha                | 3.28 ha                     | 5.35 ha  |
|   | 122.0 ac                | 8.10 ac                     | 13.22 ac   |
|   | 2.4 %                   | 1.53%                       | 1.61%  |
| <b>Mixed Riparian Forest</b>                            | 17.85 ha                | 1.21 ha                     | .69 ha   |
|   | 44.1 ac                 | 3.00 ac                     | 1.70 ac  |
|   | 0.9 %                   | 0.57 %                      | 0.21 %   |
| <b>Valley Freshwater Marsh</b>                          | 61.47 ha                | 1.98 ha                     | .99 ha   |
|   | 151.9 ac                | 4.90 ac                     | 2.44 ac  |
|   | 3.0 %                   | .92%                        | .30 %  |
| <b>Great Valley Willow Scrub</b>                        | 1.9 ha                  | 0.08 ha                     | 0.01 ha  |
|   | 4.7 ac                  | 0.20 ac                     | 0.02 ac  |
|   | 0.1 %                   | 0.04%                       | 0.0%   |
| <b>Grassland / Northern Hardpan Vernal Pool Complex</b> | 646.43 ha               | 78.11 ha                    | 113.49 ha  |
|   | 1597.3 ac               | 193.00 ac                   | 280.43 ac  |
|   | 31.2 %                  | 36.38 %                     | 34.09 %  |
| <b>Grassland/Northern</b>                               | 11.9 ha                 | 2.87 ha                     | 1.65 ha  |

| Community                             | Total Within Study Area | Original D13-Modified North | Revised D13 - Modified North (Preferred Alternative) |
|---------------------------------------|-------------------------|-----------------------------|--|
| Volcanic .Mudflow Vernal Pool Complex | 29.4 ac                 | 7.10 ac                     | 4.07 ac  |
|                                       | 0.6 %                   | 1.34%                       | .49%   |
| Vernal Marsh                          | 10.32 ha                | 0.97 ha                     | 5.55 ha  |
|                                       | 25.5 ac                 | 2.40 ac                     | 13.71 ac   |
|                                       | 0.5 %                   | 0.45 %                      | 1.67 %   |
| Open Water                            | 11.33 ha                | 0.24 ha                     | 0.11 ha  |
|                                       | 28.0 ac                 | 0.60 ac                     | 0.26 ac  |
|                                       | 0.5 %                   | 0.11%                       | 0.03%  |
| Total                                 | <b>2072.91 ha</b>       | <b>214.69 ha</b>            | <b>332.96 ha</b>                                     |
|                                       | <b>5122.1 ac</b>        | <b>530.5 ac</b>             | <b>822.73 ac</b>                                     |
|                                       | <b>100.0 %</b>          | <b>100.0%</b>               | <b>100.0%</b>  |

The greatest changes in impacts for the D13 North Modified (Preferred Alternative) are in the Agricultural Lands and Grassland/Northern Hardpan Vernal Pool Complex categories. The original impacts to Agricultural Lands was calculated at 94.74 ha (234.10 ac) compared to the revised impacts of 157.19 ha (388.40 ac), an increase of 62.45 ha (154.30 ac). The original Grassland/Northern Hardpan Vernal Pool Complex impacts were calculated as 78.11 ha (193.00 ac) compared to 113.49 (280.43 ac), a difference of 35.38 ha (87.43 ac). These figures represent corrections in design and changes in impacts due to application of regulatory methodology.

#### 4.8.8 Proposed Avoidance, Minimization and Mitigation Measures for Natural Resources

##### Introduction

The project was designed to avoid the natural resources as much as possible and has also employed many design features that serve to avoid and minimize as much as possible the natural resources in the study area. In spite of these efforts, impacts to natural resources and protected species still occur. Therefore, mitigation for the impact to these resources is required. The overall goal of the mitigation program is to offset project impacts to: 1) jurisdictional wetlands and other waters in terms of area and functions and values; 2) oak riparian forest and woodlands and individual oak and other trees; and 3) State and/or federally listed special status species: Swainson's hawk, vernal pool fairy shrimp and tadpole shrimp and valley elderberry longhorn beetle, Central Valley steelhead and Central Valley fall-run chinook salmon.

This goal will be achieved through the following three elements: 1) permanent preservation of existing high quality vernal pools and other wetlands, riparian habitats, oak woodlands, and grasslands; 2) restoration of habitats temporarily impacted during

project construction; and 3) compensation through creation of new wetlands, riparian habitats, oak woodlands, and other habitats with functions and values comparable to or better than the impacted areas. The use of all of these strategies will increase the likelihood that project impacts to biological resources and wetlands are appropriately offset.

On-site restoration of temporary impacts following completion of construction is also a preferred strategy that assures replacement of functions and values where they have been temporarily interrupted. Restoration of degraded habitats will be employed wherever possible and offers greater assurance of success compared with creation of habitats in areas where they never occurred.

Finally, this approach relies on advance mitigation of impacts wherever possible to reduce temporal loss of habitat functions and provide greater assurance of success. If mitigation can be implemented in advance and shown to be successful, it also reduces or eliminates the need to increase mitigation ratios in order to compensate for temporal habitat losses and the risk of mitigation failure.

Mitigation of various types and at various ratios is proposed depending on the resource affected. The proposed mitigation ratios are based on the goals described above, and consider temporal habitat loss and the risk of mitigation failure. Agency mitigation guidelines are also addressed. A summary of the proposed mitigation elements is presented in Table 4-23. Additional mitigation for impacts to these species is described in the Mitigation and Monitoring Plan (MMP) and includes preservation of habitat and additional revegetation and monitoring requirements. A draft MMP was reviewed by USACE, EPA and FWS and preliminary concurrence was obtained from USACE and EPA in December 2004. A final mitigation plan will be prepared in conjunction with the regulatory agencies and will be submitted for final approval before the project is constructed.

**Table 4-23 Proposed Compensatory Mitigation Requirements for Preferred Alternative D13 North Modified**

| Habitat Type   | Impact                        | Proposed Mitigation Strategy   | Proposed Preservation      | Proposed Creation               | Proposed Restoration |
|--|-------------------------------|--|----------------------------|---------------------------------|----------------------|
| <b>Jurisdictional Waters</b>   |                               |  |                            |                                 |                      |
| Vernal pools and swales (for Section 404 purposes)<br>Note: This mitigation element is fully met through vernal pool invertebrate mitigation described below | Direct: 4.23 ha (10.45 ac)    | Preservation of vernal pool wetlands at a 3:1 ratio and creation at a 1:1 ratio<br>Preservation of vernal pool wetlands at a 1:1 ratio | 12.85 ha (31.76 ac)        | 4.19 <sup>1</sup> ha (10.35 ac) | —————                |
|  | Indirect: 12.16 ha (30.05 ac) |  | 12.16 ha (30.05 ac)        |                                 |                      |
|  | Total: 16.39 ha (40.50 ac)    |  | Total: 25.16 ha (61.81 ac) |                                 |                      |

| Habitat Type   | Impact   | Proposed Mitigation Strategy  | Proposed Preservation   | Proposed Creation   | Proposed Restoration                          |
|--|--|---|---|---|---|
| Vernal marsh, freshwater marsh, and non wetland open water habitats                            | Permanent: 6.64 ha (16.41 ac)  | Creation of new marsh habitat at a 1:1 ratio<br>Creation or restoration of marsh habitat at 1:1 ratio   | _____   | 6.64 ha (16.41 ac)  | _____   |
|  | Temporary: 0.18 ha (0.45 ac)   |   |   | 0.18 ha (0.45 ac)   |   |
| Willow scrub habitats  | 0.008 ha (0.02 ac)   | Creation of new willow scrub habitat at a 1.5:1 ratio   | _____   | 0.012 ha (0.03 ac)  | _____   |
| Mixed riparian forest habitats   | Permanent: 0.69 ha (1.70 ac)<br><br>Temporary: 1.52 ha (3.76 ac)   | Preservation of existing habitat at a 2:1 ratio for offsetting permanent impacts<br>Habitat restoration/creation providing sufficient area for tree planting at a maximum density of 400 trees/ac on-site and 242 trees/ac off-site; for 6,550 planted trees, this equates to 9.96 ha (24.61 ac), a 4.5:1 habitat replacement ratio | 1.38 ha (3.40 ac)   | Restoration/creation with a total area of 9.96 ha (24.61 ac), including 1.52 ha (3.76 ac) on-site and 8.44 ha (20.85 ac) off-site<br><br>Total area of 9.96 ha (24.61 ac) |   |
| Mixed riparian forest trees  | 431 trees with 16,637 cm (6,550 in) total dbh  | Tree planting @ 1 sapling per 1" dbh impact   | _____   | Planting of 6,550 tree saplings on 9.96 ha (24.61 ac)   |   |
| Swainson's hawk  | 236 ha (584 ac) foraging habitat w/in 16 km (10 mi) of active nest   | Preservation of existing grassland habitat through fee title or conservation easement according to CDFG ratios  | 153.8-177.7 ha (380-439 ac) preserve depending on extent of active mgmt allowed       | NA  | NA  |
| Central Valley steelhead and fall-run Chinook salmon   | Temporary: 1.52 ha (3.76 ac) SRA habitat; 0.06 ha (0.15 ac) open water<br>Permanent: 0.69 ha (1.70 ac) SRA habitat | Included under open water and mixed riparian forest mitigation above  |   |   |   |
| VELB   | 2 plants with 10 stems >1" diameter  | Transplant elderberries / additional plantings per 1999 FWS guidelines  | 0.10 ha (0.24 ac) conservation area   | _____   | Planting of 29 elderberries and 29 associates |
| Vernal pool fairy shrimp/ tadpole shrimp (based on FWS guidelines for direct/indirect impacts) | Direct: 10.90 ha 26.94 ac<br><br>Indirect: 5.49 ha (13.56 ac)  | Combined preservation/creation of vernal pool wetlands at a 3:1 ratio<br>Preservation of vernal pool wetlands at a 2:1 ratio  | 19.53 ha (48.257 ac)<br>5.49 ha (13.56 ac)<br>Total: 25.01 ha (61.81 ac) <sup>2</sup> | 4.19 ha (10.35 ac)  | _____   |

<sup>1</sup> Based on maximum creation potential at Aitken Ranch.

<sup>2</sup> Includes 4.48 ha (11.06 ac) preservation already implemented at Aitken Ranch.

### Compensatory Mitigation Sites

The Biological Opinions "Terms and Conditions" require Caltrans to protect a total of 72 wetted acres of vernal pool crustacean habitat in perpetuity including 62 acres of



existing and 10 acres of created habitat. The BO specifies four locations for acquisition and protection of the required habitat including the Aitken Ranch, the Rockwell-Mariner property and the Bryte Ranch Conservation Bank and Beach Lake. Mitigation at Aitken Ranch, Bryte Ranch and Beach Lake has already been implemented. A conservation easement will be used to secure the Rockwell Mariner site.

The **Aitken Ranch** property is located just to the west of the City of Lincoln in western Placer County. The 128 ha (317 ac) property includes about 1,700 m (5,575 feet) of the Auburn Ravine riparian corridor as well as grassland/vernal pool complex and seasonal and perennial marsh. Aitken Ranch supports upland annual grasslands containing vernal pools and swales, mixed riparian forest dominated by valley oak, marsh/open water habitats, and ruderal disturbed areas.

The grasslands, riparian forest and marsh communities at Aitken Ranch provide moderate to high value for wildlife. Based on surveys performed by Wildlands, a variety of common terrestrial wildlife species is present on the property.

An USACE verified delineation has been performed for the Aitken Ranch property. The USACE confirmed the presence of 11.40 ha (28.18) ac of wetlands and other waters of the United States on the 128 ha (317 ac) parcel. This total includes 2.66 ha (6.57 ac) of vernal pools, 1.82 ha (4.49 ac) of seasonal swales, 0.57 ha (1.40 ac) of seasonal wetlands, 2.68 ha (6.63 ac) of emergent marsh, 1.72 ha (4.25 ac) of open water (pond), 1.11 ha (2.75 ac) of perennial stream and 0.03 ha (0.09 ac) of intermittent stream.

The Aitken Ranch Habitat Development Plan (HDP) meets the mitigation needs of the SR 65 project for vernal pool wetlands, oak woodlands and riparian forest.

The 232 ha (573 ac) **Bryte Ranch Conservation Bank** is located in eastern Sacramento County, extending north from the intersection of Calvine and Grant Line Roads. The property is owned by Bryte Ranch LLC. A conservation easement in favor of the California Department of Fish and Game (CDFG) has been recorded on the property and CDFG is funded through an endowment to provide management oversight. If title is transferred in the future, the property transfer documents will state that the new owner will be responsible for carrying out the mitigation plan for the property.

The site is characterized by flat to gently rolling terrain comprised of annual grassland dominated by non-native species including sticky tarweed (*Holocarpha virgata*), wild oat (*Avena fatua*), and soft brome (*Bromus hordeaceus*).

The northern portion of the site supports high-density vernal pools. The southern portion of the site supports scattered vernal pools and a seasonal wetland drainage. The central portion of the site is dominated by one large wetland feature, which exhibits both vernal pool and marsh-like characteristics. Vegetation in the pools is largely consistent

with other pools in the geographic area. The lower terrace of the property has many of the same, but is generally less diverse due to past agricultural practices.

A wetland delineation was conducted for the site during August and September 1998 in accordance with the 1987 USACE Manual (Environmental Laboratory 1987). A total of 67.56 ha (166.94 ac) of jurisdictional waters were verified by the USACE in 1999. The property includes 742 vernal pools with an area of 55.9 ha (138.2 ac) and 1.5 ha (3.6 ac) of interconnecting swales.

The 57.5 ha (142-acre) **Beach Lake Mitigation Bank** (BLMB) is located immediately south of Morrison Creek between the Sacramento River and I-5, west of the City of Elk Grove, in Sacramento County. The BLMB is located within the Stone Lakes National Wildlife Refuge. In 1994, Caltrans entered into a formal mitigation banking agreement with Federal Highways Administration, EPA, FWS, USACE and CDFG. Caltrans currently owns the property in fee. Once the mitigation credits are exhausted, Caltrans plans to transfer ownership of the property to FWS as part of the Stone Lakes refuge.

The BLMB consists of a complex of wetland habitats with intervening uplands. Before wetland enhancement, most of the property was in agricultural use. Natural communities on the site included cottonwood forest, Valley oak riparian forest, willow scrub, freshwater marsh, and seasonal marsh. These habitats were primarily associated with Beach Lake and Morrison Creek. In 1992, Caltrans delineated 14.8 ha (36.6 ac) of wetlands on the property.

The BLMB was designed primarily for mitigation of freshwater valley wetlands (excluding vernal pools). Wetlands include three constructed ponds supporting seasonal and permanent marsh and woody riparian habitats comprised of forested, shrub/scrub, and woodland types.

The **Rockwell/Mariner property** is one of the last un-fragmented vernal pool/grassland complexes remaining in western Placer County. The 792-acre parcel, which contains vernal pools and upland, provides connectivity between neighboring Auburn Ravine grassland vernal pool area to the south and the Coon Creek floodplain and riparian area to the north. Without this link, maintenance of an un-fragmented, inter-connected reserve system will be difficult to achieve. The result of which effects migratory pathways (i.e. continuity), genetic integrity, and overall biodiversity.

Given the quality of the vernal pool complexes known to exist on the Rockwell/Mariner property, it is likely that many Federal and State protected species, both plant species and the fairy shrimp and the tadpole shrimp would be found there. In

addition, the upland areas would support Federal and State protected species such as the Swainson's hawk and other grassland birds and mammals.

The Rockwell-Mariner property was identified in 2004 as a second vital site needing protection due to the property's particular location and apparent high concentration of undisturbed vernal pool crustaceans habitat. As a proposed conservation measure, Caltrans would acquire the property to preserve its significant existing habitat values. As a result, the site would also be protected from any future development that might follow the building of the bypass.

### **Mitigation of wetlands, waters of U.S. and riparian habitat**

Caltrans has investigated a number of options for mitigating impacts to wetlands and riparian habitats. The options considered fall into four categories: 1) use banked credits at Caltrans Beach Lake Mitigation Bank in Sacramento County; 2) purchase mitigation credits from an existing or proposed, private mitigation bank that serves the project area; 3) purchase land or conservation easements over land with high quality resources and preserve it in perpetuity; and 4) use surplus lands purchased for construction of the Lincoln Bypass as mitigation areas.

After consideration of these mitigation options, Caltrans determined that the most effective mitigation approach was a combination of the following elements:

1. Perform on-site restoration of marsh and riparian habitats temporarily impacted during project construction and create on-site vernal marsh habitat at the Yankee Slough crossing;
2. The Aitken Ranch conservation area fulfills much of the proposed compensatory mitigation for the SR 65 project. Aitken Ranch has quality vernal pools and swales, mixed riparian forest, and grassland for preservation, and areas appropriate for proposed compensatory habitat creation activities.
3. Purchase fee title or a conservation easement over a private property (properties) located within the vicinity of SR 65 project area.
4. Use available credits at the Beach Lake mitigation bank for offsetting impacts to freshwater marsh and riparian habitats. Beach Lake is a FWS approved Caltrans mitigation bank located in Sacramento County that has well established riparian and marsh habitats available for use on the SR 65 project.
5. Purchase vernal pool preservation credits from an approved conservation bank to make up any shortage in required preservation credits.

Caltrans is also working with Placer Legacy and the Environmental Protection Agency to conserve the Coon Creek riparian corridor through purchase of conservation

easements within the Coon Creek watershed. This project feature will help preserve open space along the Coon Creek corridor in perpetuity.

### **Mitigation Measures for Vernal and Freshwater Marsh, Open Water and Willow Scrub**

Vernal and freshwater marsh, open water, and willow scrub are discussed together because they typically occur in geographic proximity (e.g., as part of a single wetland system). The project will result in permanent, direct impacts to 5.55 ha (13.71 ac) of vernal marsh habitats, 0.99 ha (2.44 ac) of freshwater marsh habitats, 0.008 ha (0.02 ac) of willow scrub habitat, and 0.11 ha (0.26 ac) of open water habitat. An additional 0.12 ha (0.30 ac) of freshwater marsh and 0.06 ha (0.15 ac) of open water will be temporarily impacted during project construction. The basic approach for mitigation of these wetland and open water habitats is to create replacement habitat that provides functions and values comparable with the habitats to be impacted. Restoration of 0.12 ha (0.30 ac) of freshwater marsh habitat temporarily impacted during construction will occur on site at Ingram Slough; restoration of 0.06 ha (0.15 ac) of temporary impact to open water will occur on site at Auburn Ravine. Mitigation (0.81 ha/2.00 ac) for a portion of the permanent impact to vernal marsh will also be provided on site at Yankee Slough. The remainder of the vernal marsh mitigation (4.74 ha /11.71 ac), freshwater marsh mitigation (0.99 ha/2.44 ac), willow scrub mitigation (0.01 ha/0.03 ac), and open water mitigation (0.11 ha/0.26 ac) will occur off site at Aitken Ranch and Beach Lake Mitigation Bank.

Mitigation for vernal and freshwater marsh and open water habitats is proposed at a 1:1 ratio; mitigation for willow scrub habitat is proposed at a 1.5:1 ratio. Normally, these ratios are increased in order to offset the risk of mitigation failure and the temporal loss of habitat functions as the replacement habitat develops. However, for this project, mitigation for these habitats is already in place and will be well established by the time project impacts occur. Created wetland habitats at Beach Lake have been in place for over ten years and are well developed. Habitats at Aitken Ranch will also have been in place for several years before construction of the SR 65 project begins.

### **Mitigation Measures for the Valley Vernal Pool Fairy Shrimp and Tadpole Shrimp**

Mitigation for vernal pool fairy shrimp and tadpole shrimp will be accomplished through preservation and creation of vernal pool and swale habitats as described above. Table 4-24 shows the direct and indirect impacts to vernal pools. Table 4-25 shows the proposed conservation areas, both preservation and creation along with the acreage proposed at each site.

**Table 4-24 Vernal Pool Impacts and Mitigation**

|                       | <b>Acreage Affected</b> | <b>Acres of Preservation</b> | <b>Acres of Creation</b> |
|-----------------------|-------------------------|------------------------------|--------------------------|
| <b>Direct Total</b>   | 26.94 ac                | 70.47 ac                     | 10.35 ac                 |
| <b>Indirect Total</b> | 13.56 ac                | 27.12 ac                     | --                       |
| <b>Total</b>          | 40.50 ac                | 97.59 ac                     | 10.35 ac                 |

**Table 4-25 Proposed Conservation Areas to Create and Preserve Vernal Pool Habitat in Perpetuity**

|                     | <b>Aitken Ranch</b> | <b>Rockwell/Mariner</b> | <b>Bryte Ranch</b> | <b>Total Acreage</b> |
|---------------------|---------------------|-------------------------|--------------------|----------------------|
| <b>Preservation</b> | 11.06 ac            | 43.22 ac                | 7.53 ac            | 61.81 ac             |
| <b>Creation</b>     | 10.35 ac            | -                       | -                  | 10.53 ac             |
| <b>Total</b>        | 21.41 ac            | 43.22 ac                | 7.53 ac            | 72.16 ac             |

**Mitigation Measures for Swainson's Hawk**

Mitigation for impacts to the State listed Swainson's hawk will be accomplished in accordance with CDFG guidelines. The guidelines require the acquisition of Habitat Management lands at various ratios based on the distance of the proposed project from an active nest tree. Habitat Management lands may be acquired in fee title, or through a conservation easement, based on the following criteria:

For projects within one mile of an active nest tree:

- Option A: One acre of Habitat Management lands for each acre of development where at least 10 percent of the Habitat Management lands are provided through fee title or conservation easement that allows active management of the habitat; the remaining 90 percent can be provided through conservation easement, acceptable to CDFG, on agricultural lands that provide foraging habitat for Swainson's hawks; or
- Option B: One-half acre of Habitat Management lands for each acre of development where all of the lands are provided through fee title or a conservation easement that allows for active management of the habitat.

For projects within five miles, but farther than one mile, from an active nest tree:

- Three-fourths acre of Habitat Management lands for each acre of development where all of the lands are provided through fee title or conservation easement, acceptable to CDFG, on agricultural lands that provide foraging habitat for Swainson's hawks.

For projects within ten miles, but farther than five miles, of an active nest tree:

- One-half acre of Habitat Management lands for each acre of development where all of the lands are provided through fee title or conservation easement,

acceptable to CDFG, on agricultural lands that provide foraging habitat for Swainson's hawks.

Due to the linear nature of the SR 65 project, the distance to an active nest tree varies along the alignment. The total area of impacted foraging habitats within each distance range to active nests was calculated, and the mitigation requirements are summarized below.

**Table 4-26 Swainson's hawk Mitigation Measures (CEQA)**

| <b>Distance to Nest Tree</b>                | <b>Area</b>                     | <b>Mitigation Requirement</b>  |
|---|---------------------------------|--|
| Less than one mile                          | 47.7 ha<br>(118 acres)          | a) 47.7 ha (118 acres) of suitable lands, 10% must be available for active management; or<br>b) 23.9 ha (59 acres) of suitable lands, all of which must be available for active management |
| Greater than one mile/less than five miles  | 141.2 ha<br>(349 acres)         | 105.9 ha (261.7 acres) of suitable lands   |
| Greater than five miles/less than ten miles | 47.3 ha<br>(117 acres)          | 23.7 ha (58.5 acres) of suitable lands   |
| Greater than ten miles                      | 0                               | No measures required   |
| <b>Total</b>                                | <b>236.3 ha<br/>(584 acres)</b> | <b>177.6 ha (438.2 acres) with option a; or<br/>153.5 ha (379.2 acres) with option b</b>   |

To accomplish part of this mitigation, 97.2 ha (240.5 acres) of grassland habitat will be preserved in perpetuity at Aitken Ranch. This preserved grassland consists of the matrix in which the preserved vernal pools and swales are located, and will be managed for both Swainson's hawk and vernal pool species. The active management of Aitken Ranch for Swainson's hawk will allow option "b" for mitigation acreage requirements to be used; therefore, an additional 56.1 ha (138.7 acres) of Swainson's hawk grassland preservation will need to be provided at another suitable location.

#### **Mitigation Measures for Valley Elderberry Longhorn Beetle**

Mitigation for impacts to VELB will be accomplished in accordance with the 1999 FWS Mitigation Guidelines (USDI Fish and Wildlife Service 1999). These guidelines specify that elderberry plants will be avoided whenever possible. If avoidance is not possible, elderberry shrubs will be transplanted. In addition, each elderberry stem measuring greater than one inch in diameter that is impacted (either by removal or transplanting) will be replaced with seedlings or cuttings at a ratio ranging from 1:1 to 8:1. Impacted elderberry shrubs in riparian communities require greater replacement ratios than impacted elderberry shrubs in non-riparian settings. Studies have shown that VELB occur in greater abundance in dense native plant communities with a mixed understory; accordingly, the guidelines require associated natives to be planted at a 1:1 or 2:1 ratio for each elderberry seedling planted. The replanting must occur in a specified

conservation area. Elderberry shrubs must be surrounded by a 30.48 m (100 ft) buffer from any disturbance or activity. Firebreaks may not be included in conservation areas or buffer zones. The replanting ratios are summarized in Table 4-27 below.

If the elderberry plants cannot be transplanted, FWS may allow replanting at a higher ratio than stated in the guidelines for each plant that cannot be transplanted. Each transplanted elderberry shrub must be provided with an area of 548.6 m<sup>2</sup> (1,800 ft<sup>2</sup>), with a maximum of five elderberry cuttings or seedlings planted within that 548.6 m<sup>2</sup> (1,800 ft<sup>2</sup>) area. A maximum of five associated natives may be planted within the same area. Every five additional elderberry seedlings or cuttings and associated natives must be provided with an additional 548.6 m<sup>2</sup> (1,800 ft<sup>2</sup>).

The preferred alternative would directly impact two elderberry plants that include ten stems over one inch diameter at ground level. The plants are located in an area where they cannot be avoided without major project modifications that would likely result in other impacts. The elderberry plants are both located along an old breakout channel of Auburn Ravine. Since this area was historically part of a larger riparian system, these plants are considered located within a riparian setting. No exit holes were observed on the plants. Proposed mitigation, consistent with FWS guidelines, is as follows:

1. The two elderberry shrubs which are located within 6 m (20 ft) of the centerline of the proposed alignment will be transplanted to a Service-approved conservation area that will be protected in perpetuity.
2. To compensate for direct affects to the beetle, prior to ground-breaking activities at the project site, Caltrans will establish 29 rooted elderberry seedlings and 29 associated native plants at a Service-approved conservation area.
3. The proposed conservation area is the Aitken Ranch property. The two transplanted shrubs, seedlings and plantings will be established on this property. The minimum area required is 0.10 ha (0.24 ac) to ensure that no more than five elderberry seedlings and five associated native plants are planted per 548.6 m<sup>2</sup> (1,800 ft<sup>2</sup>). The conservation area shall be managed and monitored in perpetuity as outlined in the Beetle Conservation Guidelines (FWS 1999).

**Table 4-27 Elderberry Mitigation per the Biological Opinion (FWS)**

| Size Category | No. of Stems | Exit Holes | Ratio | Elderberry Seedlings | Associated Species Ratio | Associated Species Plantings |
|---------------|--------------|------------|-------|----------------------|--------------------------|------------------------------|
| 1" - 3"       | 3            | No         | 2:1   | 6                    | 1:1                      | 6                            |
| 1" - 3"       | 0            | Yes        | 4:1   | 0                    | 2:1                      | 0                            |
| 3" - 5"       | 5            | No         | 3:1   | 15                   | 1:1                      | 15                           |
| 3" - 5"       | 0            | Yes        | 6:1   | 0                    | 2:1                      | 0                            |
| >5"           | 2            | No         | 4:1   | 8                    | 1:1                      | 8                            |
| >5"           | 0            | Yes        | 8:1   | 0                    | 2:1                      | 0                            |
| <b>TOTAL</b>  | <b>10</b>    |            |       | <b>29</b>            |                          | <b>29</b>                    |



**Mitigation measures for the Central Valley Steelhead and Fall-Run Chinook salmon**

In addition to the creation of mixed riparian forest habitat along Auburn Ravine at Aitken Ranch, Caltrans will re-vegetate all temporarily impacted riparian habitat (shaded riverine aquatic habitat) along the sections of Coon Creek and Auburn Ravine that are disturbed by project activities. Trees will be planted along the banks near bridge structures and within placed riprap, with monitoring to ensure sufficient survival for habitat development. A total of 15.22 ha (3.76 ac) of riparian forest habitat will be replaced on site with 1,504 plantings, consisting of 977 oak saplings/acorns plus 527 other riparian species at a density of 988 trees per ha (400 trees per ac).

**Avoidance and Minimization for Natural Communities**

1. To the maximum extent feasible, the final project alignment shall be routed to avoid or minimize impacts to high quality natural communities including oak woodland, riparian forest and grasslands with high concentrations of vernal pools.
2. Crossings of Auburn Ravine, Markham Ravine and Coon Creek shall be located where riparian resources are least extensive; crossings shall be aligned perpendicular to the riparian corridor to minimize the crossing impact.
3. Unavoidable impacts to mixed riparian forest shall be offset with a combination of on-site restoration and off-site creation or restoration of riparian forest habitat through in-kind planting of 1 tree sapling per 1" dbh impact for all trees lost; on-site planting will be at a maximum density of 400 trees/acre; off-site planting will be at a maximum density of 242 trees/acre. Overall, this is equivalent to a 4.5:1 ratio. In addition, preservation of existing oak riparian habitat at a 2:1 ratio will be secured to offset permanent loss of mature riparian oak habitat.
4. Unavoidable impacts to oak woodland habitats shall be offset through creation or restoration of oak woodland habitat to accommodate in-kind planting of one oak sapling per 1" dbh of trees impacted at maximum density of 200 trees/acre (equivalent to 2:1 ratio); and (2) preservation of existing oak woodland habitat at a 2:1 ratio. Oak woodland habitat used to offset impacts shall be protected in perpetuity through conservation easement, deed restriction or other equivalent measures.
5. Prior to construction during the spring breeding season, a qualified biologist shall conduct pre-construction surveys of impact areas to check for nesting birds. If nesting activity is detected, construction activities shall avoid nest sites until the biologist determines that the young have fledged or nesting activity has ceased.
6. Drainage shall be passed through the roadway prism via bridge or culvert. Culverts shall be straight (without bends) to facilitate wildlife movements.

7. All significant habitats located outside of construction areas shall be designated as Environmentally Sensitive Areas (ESA) and so designated on construction plans and specifications. No encroachment into ESA shall be allowed.
8. Where feasible, culverts will be designed with characteristics that will be conducive to wildlife movements.

#### **4.8.9 Executive Order 13112: Invasive Species**

Executive Order (EO) 13112 requires that federal agencies prevent and control the introduction and spread of invasive species. Federal agencies cannot authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species. To comply with EO 13112 Caltrans will implement the following measures:

- Construction supervisors and managers will be informed of the importance of controlling and preventing the spread of noxious weeds;
- Construction equipment leaving an identified invasive plant area will be cleaned at a designated vehicle wash facility;
- Prior to arriving at the project site, construction equipment (from a noxious weed-infested area or area of unknown weed status) will be cleaned of all attached soil or plant parts at a designated vehicle wash facility;
- Measures set forth in the Stormwater Pollution Prevention Plan (SWPPP) will be implemented to re-vegetate and restore disturbed areas immediately after construction is complete. Re-vegetation will require the use of certified weed-free native and non-native species mixes. The SWPPP will also specify that all disturbed areas will be weeded and reseeded in subsequent years if determined necessary.

#### **4.8.10 Wetlands Only Practicable Alternative Finding**

On federally funded projects, impacts on wetlands must be identified in the environmental document and alternatives that avoid wetlands must be considered. There is no avoidance alternative. If wetland impacts cannot be avoided, then all practicable measures to minimize harm must be included. This must be documented in a specific “Wetlands Only Practicable Alternative Finding” in the Final Environmental Document.

Since the determination of the preferred alternative (D13 North Modified) Caltrans has investigated numerous avoidance and minimization measures to reduce potential project impacts to listed species and other biological resources. A number of these measures have been incorporated into the project; these measures are summarized below:

- The footprint of the park and ride lot at the south end of the project will be reduced from 1500 to 200 spaces (with an initial construction of 150 spaces). In addition, the area for future braided ramps will be removed.
- Roadside ditches and side-slopes will be modified to minimize project footprint impacts south of Nelson Lane.
- The proposed interchange at Nelson Lane will be reduced to an at-grade intersection to reduce the project footprint in this area.
- The reach of Yankee Slough that meanders within the roadway footprint will be recreated outside of the roadway footprint to recreate pre-project hydrology and restore vernal marsh habitat on site.
- The height (profile) of the roadway north of North Yankee Slough and Riosa Road will be lowered to reduce the footprint at this location. This change avoids additional impacts from hauling operations.
- Proposed passing lanes will be eliminated at two locations to avoid the need to raise the height of the roadway and increase the footprint.
- The clearance between the catch line and the proposed right-of-way will be reduced from 5.0 m (16.4 ft) to 3.0 m (9.8 ft) on both sides of the freeway throughout the project limits.
- A proposed “v” ditch on both sides of the proposed alignment will be removed to decrease the project footprint.
- The minimum grade will be changed from 0.3% to 0.0 % wherever possible throughout the project limits. This change will decrease the height of the roadway, thus decreasing the side slopes and project footprint.
- A proposed detention basin east of the project corridor, just south of the South Sutter Water District canal, will be eliminated to avoid impacts to vernal pools at this location.
- All wetlands, riparian areas, and other sensitive vegetation/habitats adjacent to designated work areas will be designated as environmentally sensitive areas (ESAs) and clearly indicated as such on project construction plans. Project specifications will include a requirement that ESAs are clearly delineated with brightly colored fencing, rope or equivalent before beginning construction.
- Measures consistent with the current Caltrans’ Construction Site BMPs Manual (including the SWPPP and WPCP Manuals [[http://www.dot.ca.gov/hq/construc/Construction\\_Site\\_BMPs.pdf](http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf)]) will be implemented to minimize erosion and runoff during construction.

- Storm water runoff from the proposed roadway will be collected and routed into water treatment systems (e.g., bioswales, biostrips, or detention basins) before discharging into drainages in the project area.

All practicable measures to minimize harm have been implemented. Based upon the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands and that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.

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## 4.9 CULTURAL RESOURCES

A cultural resources inventory resulted in the identification of fifteen archaeological resources and the evaluation of eight pre-1946 architectural resources. The Historic Architectural Survey Report (HASR) and the supplemental HASR (completed in 1989 and 1990) evaluated a total of eight properties, two of which were determined to be potentially eligible for listing in the NRHP: the Fickewirth Ranch and the Sheridan Cash Store (a.k.a. Country Store). Two additional properties in the vicinity of the project have been listed on the National Register since 1990; the Lincoln Public Library at 590 Fifth Street (listed 12/10/90) and the Women's Club of Lincoln at 499 E Street (listed 5/30/01). Both of these buildings are within the town of Lincoln and not directly affected by the project.

In the Supplemental HASR (dated August 1990), 39 properties were treated in accordance with the December 20, 1989 "Memorandum of Understanding Regarding Evaluation of Post-1945 Buildings, Moved Pre-1945 Buildings, and Altered Pre-1945 Buildings." Of the 39 properties, 21 do not predate 1957 and thus require no further study. The remaining eighteen properties predate 1957 and were formally evaluated and determined to not be eligible for listing in the NRHP. The application of "Caltrans Interim Policy for the Treatment of Buildings Constructed in 1957 or Later" was documented in a statement of findings in the Supplemental HASR completed in September 2002. Appendix D contains the letters from SHPO.

Four of the archaeological finds were adjacent to, but outside of, the project study area and were not considered further. Eight of the remaining eleven archaeological resources were recorded as isolated finds or features and three were recorded as archaeological sites. Two of these three sites are considered potentially eligible for inclusion in the National Register of Historic Places (NRHP) until they have been evaluated for significance.

These two sites are potentially affected by the AAC2 alignment. The alignment passes through one of the sites and is in close proximity to the other. If the AAC2

alternative were chosen as the preferred alternative, the first site would have been tested for significance and eligibility for listing in the NRHP. An assessment of the impacts on this site cannot be made until the deposit has been evaluated.

Preliminary plans indicate that the third site will not be directly impacted by the proposed construction. As a result, the site will be designated as an environmentally sensitive area (ESA) to ensure its protection. If design plans are modified such that the site is impacted, it will be tested for significance for listing in the NRHP, and an assessment of the effects would be made at that time.

Two of the eight architectural resources were determined eligible for the NRHP by consensus of the State Historic Preservation Officer (SHPO) on October 21, 1991; the Fickewirth Ranch and the Sheridan Cash Store. Copies of the correspondence with SHPO can be found in Appendix D.

The Sheridan Cash Store is adjacent to A5C1, AAC2, D1, and D13, but will not be affected by any of these alternatives. The storefront sits approximately 24 m (80 ft) from the pavement edge of SR 65. This distance will not change if the highway is relinquished to the county, nor will additional right-of-way be required for any potential road improvements near the store. Traffic and its attendant noise are likely to decrease if any of the longer build alternatives are selected.

The eligibility of the Sheridan Cash Store under Criterion A is based on its association with Sheridan's economic development and for embodying the characteristics of its time, period or method of construction. The brick false-front store was designated a Point of Historical Interest by the California Historic Resource Commission on August 3, 1990, by virtue of being the only remaining commercial brick building in Sheridan. No new elements will be introduced into the setting; thus none of the proposed alignments will alter the characteristics of the property that qualify it for the NRHP.

The Fickewirth Ranch is located at 2780 Dowd Road, approximately 4.8 km (3.0 mi) south of the town of Sheridan. The property consists of a residence, a tank house, a windmill, a long shed (originally a chicken house), a timber-framed hay barn, a one-time blacksmith shop and several smaller miscellaneous sheds. The residence and most of the outbuildings were constructed in 1901. The house was originally built as a one-story Queen Anne cottage; a second story was added about 1912. The buildings on the property have been maintained in their original form with little or no modification. Materials used to maintain the property were of the same kind as the original, thereby serving to preserve the original character and integrity of the farm complex. The house is one of the earliest intact residences remaining in the local area.

Mr. and Mrs. Fickewirth currently own the ranch. The property is approximately 1524 m by 762 m (5000 ft by 2500 ft).

The Fickewirth Ranch has been determined eligible for the NRHP at the local level under Criterion C as an embodiment of its time, period, and method of construction. All of the structures on the property, in their form and function, contribute to this determination. Furthermore, the property remains in its rural setting.

Alternatives D1 and D13 and A5C1 would require a portion of the Fickewirth Ranch. The Department's and the FHWA, in applying the Criteria of Effect and Adverse Effect (36 CFR 800.9) have concluded that a "Finding of No Effect" is appropriate for each of the three alignments going through this property, and have obtained SHPO's concurrence on this determination. SHPO concurred with this determination on January 30, 1995. Copies of this correspondence can be found in Appendix D.

On February 2, 2006, Caltrans sent a letter to Mr. Wayne Donaldson, State Historic Preservation Officer (SHPO), seeking his office's concurrence in the substitution of a finding of "no adverse effect" pursuant to revised regulations issued by the Advisory Council on Historic Preservation (ACHP) (36 CFR Part 800), to replace the 1995 finding of "no effect," a term not found in the current ACHP regulations. The SHPO concurred in this finding on February 16, 2006. Both letters may be found in Appendix D.

The letter also advised the SHPO that his office's concurrence in FHWA's determination of no adverse effect could serve as the basis of a finding of *de minimis* impact under Section 4(f) of the Department of Transportation Act of 1966, 49 U.S.C. 303. Under the 40-year-old provisions of Section 4(f), the Secretary of Transportation may not use land from a property on or eligible for the National Register of Historic Places unless there is 1) no prudent and feasible alternative to the use of that land and 2) the Secretary has undertaken all possible planning to minimize harm to the historic property. Under a recently enacted amendment to Section 4(f), however, that statute will be considered satisfied if the project would result in a *de minimis* impact on the protected property. For historic sites, the new law states that the Secretary may find such a *de minimis* impact if consultation with the SHPO results in a determination that a transportation project will have "no adverse effect" on the historic site or that there will be "no historic properties affected" by the proposed project. With regard to the Fickeworth Ranch, the SHPO has concurred in the FHWA's determination of "no adverse effect" as the result of the "strip takes" contemplated by Alternatives D1, D13, and A5C1. Accordingly, the provisions of Section 4(f) would be considered satisfied should any of these alternatives be selected.

#### **4.9.1 Application of the Criteria of Effect on the Fickewirth Ranch**

Alternatives A5C1, D1 and D13 pass through the 104 ha (258 ac) agricultural parcel containing the Fickewirth Ranch. The proposed alignment for Alternative A5C1 lies approximately 457 m (1500 ft) from the ranch complex, while Alternative D1 and D13 are about 610 m (2000 ft) from the buildings. The elevation drops approximately 1.5 m (5 ft) between the building complex and each of the alignments. The proposed highway for these two alternatives will not be seen from the building complex, although vehicles on the highway will be visible. A similar condition would exist for the A5C1 alternative. Furthermore, the view of the alignments would largely be blocked from the Fickewirth residence by the surrounding outbuildings.

Projected traffic counts on this section of the proposed freeway are anticipated to be relatively low. A noise level projection model found that any increase in sound would be well below the criteria level of a significant noise impact as the minimum distance of 183 m (600 ft) from the ranch complex. The proposed alternatives are all at a much greater distance; thus, the increase in noise from the new highway will be negligible. Furthermore, because it is located immediately adjacent to Dowd Road, traffic and its attendant impacts have always been a factor in the setting of the ranch complex. The addition the proposed freeway at a distance of 457 to 610 m (1500-2000 ft) will not create elements that did not previously exist.

The eligibility of the Fickewirth Ranch is based on the type and period of the building complex. As no new elements would be introduced into the setting of the property, none of the alignments would alter any characteristic of the property that qualifies it for the National Register of Historic Places. Thus, the proposed project will have no adverse effect on the Fickewirth Ranch.

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### **4.10 HAZARDOUS WASTE**

The preferred alternative (D13 North Modified) proposed project work scope involves yellow traffic stripe removal at the beginning and end of the project limits, as well as the limits of work within all the local roads.

The preferred alternative requires the acquisition of several parcels. A record search dated January 5, 2004 and an updated Initial Site Assessment dated February 26, 1999 was reviewed. With the exception of two suspected contaminated parcels, no hazardous waste is expected to be encountered within the proposed parcels to be acquired. Access was denied to the suspicious properties, however; approximate clean up costs for hazardous waste could be as much as one million dollars.



Two parcels are expected to contain soil and groundwater hazardous waste contamination and other unknown contaminants. Access was denied to these property, but approximate clean up costs for hazardous waste could be as much as one million dollars. A hazardous waste Preliminary Site Investigation (PSI) is required to evaluate the condition of those properties and the need for avoidance and/or clean-up prior to acquisition.

Any building or other structure to be acquired will be evaluated for the presence of asbestos and lead-based paint. Due to the agricultural nature of the area, many of the parcels contain above ground storage tanks, which will require a PSI. In addition, many of the residences are equipped with septic systems; unknown conditions relating to the septic systems may exist.

Due to the former use of waste oil, potentially containing polychlorinated biphenyls (PCB's) to control dust in the railroad right-of-way, the railroad areas within the alignment could contain PCB affected soil as well as lead and/or diesel. These areas will require a PSI.

#### **4.10.1 Avoidance and Minimization Recommendations**

##### **Avoidance and Minimization Measure: Survey and sampling analysis for Asbestos containing Materials & Lead-based paint**

Comprehensive asbestos and lead-based paint surveys that meet the requirements of current EPA and OSHA regulations are will be implemented prior to any demolition activities associated with structures in the proposed alignment corridor. Any component that is impacted by demolition activities will be characterized to ensure proper handling and disposal.

##### **Avoidance and Minimization Measure: Sampling and Testing of Yellow Traffic Striping along Existing Roadway**

Depending upon the road widening/connection option used, yellow striping along existing SR 65 may require removal. However, if striping paint is to be removed or impacted in any manner, sampling and testing of the yellow striping scheduled for removal will be performed to determine the presence of lead and the need for mitigation prior to or during construction if the lead content is above the regulatory thresholds. A Lead Compliance Plan and a Health and Safety Plan will be prepared to address worker safety when working with potentially lead-bearing paint.

##### **Avoidance and Minimization Measure: Sampling and Analysis of Transformer Fluid from Electrical Transformers.**

A site reconnaissance indicated the presence of pole mounted electrical transformers that are potential sources of PCB's. If leaks from electrical transformers

that either will remain within the project construction zone or will require removal and/or relocation are encountered before or during construction, the transformer fluid will be sampled and analyzed by qualified personnel for detectable levels of PCBs. If PCBs are detected, the transformer will be removed and disposed of in accordance with regulatory agency requirements. Any stained soil encountered below electrical transformers with detectable PCBs levels will also be handled and disposed of in accordance with regulatory agency requirements. It is anticipated that, with the current standard of care, removal of any transformers for the project will not pose a significant hazardous materials risk.

**Avoidance and Minimization Measure: Testing for Aerially Deposited Lead in Surface/Near-Surface soils.**

A preliminary investigation and screening for ADL will be performed along the proposed project. Segments that will encroach/connect into existing SR 65 State Right-of-way shall be screened in order to determine the levels of lead in soil. Should ADL be encountered above regulatory thresholds, the soil will be handled and/or disposed of in accordance with regulatory agency requirements. A Lead Compliance Plan and a Health and Safety Plan will be prepared to address worker safety when working with potentially lead-bearing soils.

**Avoidance and Minimization Measure: Soil and Groundwater sampling for hazardous waste contaminants.**

A preliminary investigation and screening for soil and groundwater impacts from hazardous materials or wastes and/or petroleum hydrocarbons on a site-specific basis will be performed prior to acquisition in order to determine the levels of contamination. Should soil and or groundwater contamination be encountered above regulatory thresholds, the soil will be handled and/or disposed of in accordance with regulatory agency requirements. A Health and Safety Plan shall be prepared to address worker safety when working with potentially contaminated soils; Special Provisions apply to this type of project.

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## 4.11 VISUAL RESOURCE IMPACTS

Visual character within the Study Area is changing due to planned growth as indicated in the Lincoln General Plan, Land Use Map (refer to Chapter 3 Affected Environment; Social, Economic and Land Use Section). Eventually, as more land becomes developed in this corridor, the rural visual quality will slowly transform into urban build-out. Development diminishes visual quality and character due to soundwalls and structures built adjacent to the right-of-way.

The D13 North Modified alternative is expected to result in similar visual impacts as the other D alternatives. All six alignments begin in the same general location, approximately 1.6 km (1 mi) south of the City of Lincoln. The alignments then cross over the UPTC railroad tracks and pass through west Lincoln where development is occurring. A park and ride site is planned slightly north of the overhead between the UPTC railroad tracks and existing SR 65. The large overhead (also known as an overpass) will provide expansive panoramic views from the roadway. Views from the overhead will provide a variety of visual elements, such as the City of Lincoln, pastureland, creek corridors, and oak woodland, the Sierra Nevada, Sutter Buttes and Coast Range.

This overhead could provide areas for planting on its soil-covered slopes. Once plantings mature, trees will provide an important visual vertical element. Once development and build-out occurs, this overhead may become the gateway to the City of Lincoln. It is very important to have an aesthetically pleasing, architecturally interesting structure since the overhead will dominate over surrounding uses, becoming a prominent visual feature.

All of the alignments, except for D1, break up a small cluster of rural home sites at the bend in Moore Road. This disrupts the unity and harmony of such enclaves and may lead to viewer confusion. It may be necessary to screen residences from the proposed highway. Screening methods include dense plantings for screening and barriers, possible soundwalls for noise attenuation and/or fencing with wood slats. A landscape architect will suggest the most feasible and appropriate screening method.

In and around Moore Road and Auburn Ravine is predominantly oak woodland. All the alignments run through this fading piece of California heritage land, causing the removal of prime oak habitat. California white oaks, also known as valley oaks, are the predominant species. Minimization of impacts to these heritage oak trees is of prime importance.

All of the alignments traverse Auburn Ravine. The bridge crossing Auburn Ravine will be integrated into existing landforms with a simple, clean and aesthetically pleasing design. If the channel needs to be relocated, its banks will be replanted with native species and restored to its existing conditions. This creek corridor provides a prime location for oak plantings.

### **The AC corridor**

The **AAC2** and **A5C1** pull away from SR 65 approximately 322 m (200 ft) farther northward causing a wider bend to the west. After crossing Ingram Slough, these

alignments remove part of the Aitken Ranch Turkey Farm, causing the removal of three buildings and divide the rural home sites on Moore Road.

The AAC2 and A5C1 alignments continue northwest, requiring a second railroad overhead before tying into existing SR 65. This overhead is very similar to the first overhead where the Lincoln Bypass pulls away from existing SR 65. However, northbound views now show the rural nature of the foothills, the Sierra Nevada, Sutter Buttes, Coon Creek and nearby agriculture along with the rural community of Sheridan. Just before the Lincoln Bypass ends, the four-lane expressway narrows down into a two-lane highway and ties into existing SR 65. The Joiner Ranch Project Area to the east of the AC corridor is rapidly developing. Figure 4-6 illustrates the typical height, size, color and location of a soundwall that may occur along the Lincoln Bypass. Since the circulation of this draft document, many homes on the South end of the project have been constructed or are in various stages of being built. The photograph depicted in Figure 4-9 has changed and now contains several houses.

From this key view, the height of the soundwall will obliterate most views of existing oaks in the background. However, oak tree replacement may occur adjacent to freeway soundwalls. This simulation shows mature oak trees. However, one must also remember that in the future, this area will be completely developed to the soundwall.

The **A5C1 and AAC2** alignments begin approximately one-half mile north of Nicolaus Road with a wide gradual northwest curve. Both alignments follow the same route for approximately two miles before breaking apart south of Coon Creek, passing through vernal pools for approximately 4.8 km (3 mi) between Nicolaus and Dowd Roads.

Alignment **AAC2** connects into the AA alignment north of the Nicolaus Road interchange and Markham Ravine, near the power lines on the Foskett property, following the same route as A5C1 until the Nader Ranch. After the Nader Ranch, AAC2 curves northward in a wide, gradual curve and crosses Coon Creek approximately 243 m (800 ft) upstream from the A5C1 alignment. By going between oak clusters, this alignment promotes more of the feeling of crossing from one area and entering another area.





Existing Key View from the Joiner Ranch Project Area (looking west) - Original

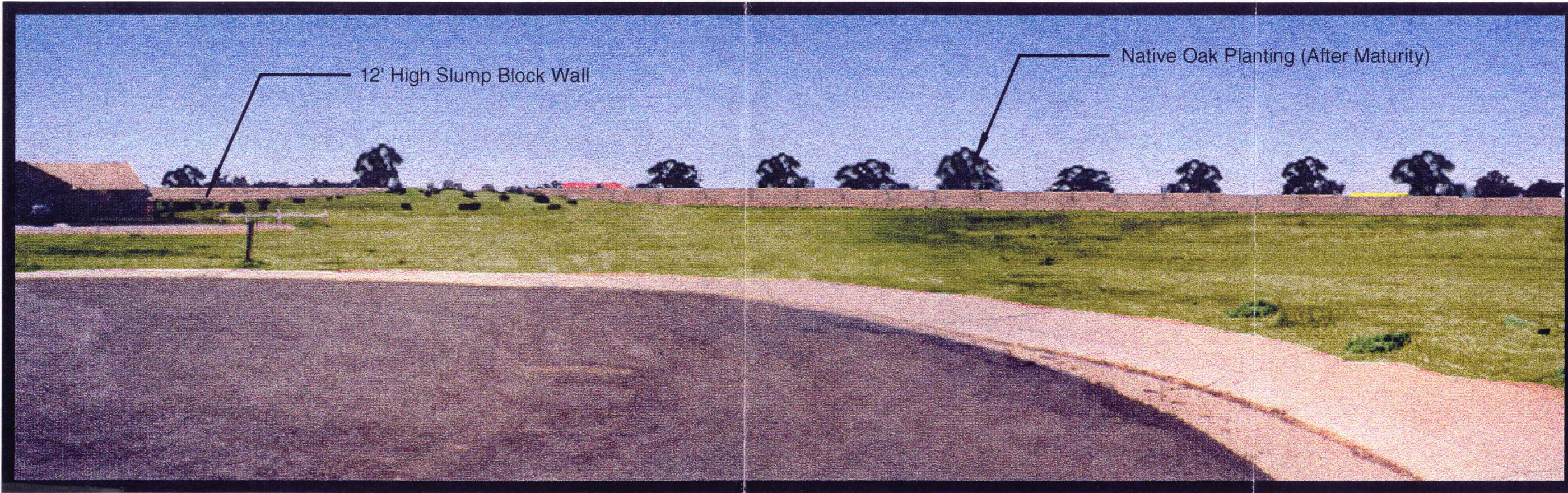


Figure 4-6  
Visual Simulation



After crossing Coon Creek, **A5C1** curves widely through agricultural lands, with an overcrossing at Dowd Road. Rural ranches and meandering creek corridors are visible to the east while traveling through the relatively flat terrain. Two bridges are needed for Yankee slough and Dalby Road will be realigned. A5C1 gradually rises into the unique mile-wide foothill that was described in Chapter 3. An interchange is planned for Riosa Road.

### **The D corridor**

The **D1 and D13** alignments, including the D13 North Modified, veer west of the Lincoln Municipal Airport. Both D1 and D13 present negative views for residents of the rural subdivision on Rockwell Lane. These residents now have panoramic rural views of Markham Ravine and agricultural areas to the south. Once the bypass is built, head and taillights will be the most dominant visual intrusion to the south.

After curving to the northwest, crossing Ingram Slough and cutting through the corner of Aitken Farms, the **D13** alignment breaks up the small rural cluster of home sites at the bend in Moore Road. After crossing Auburn Ravine, it then curves gradually to the west. This section of the proposed alignment provides exceptional views of sunrises and sunsets.

The Nelson Road interchange provides changes in topography while also allowing oak restoration areas. D13 parallels the rural Rockwell Lane subdivision. The closest structures within this rural subdivision are a minimum of 457 m (1500 ft) away from the D13 alignment. Even though this rural subdivision diminishes the integrity of the natural visual setting, it provides a middle ground focal point. This 457 m (1500 ft) distance retains the visual quality of this rural subdivision, both from the residents' viewpoint and for users of the Lincoln Bypass.

Alignment D13 then widely curves to the north, crossing Markham Ravine. The bridge should be simple; complimenting existing landscapes through color, size, form, texture and an aesthetically pleasing architectural design as previously discussed. In addition, a small triangular portion of land adjacent to the creek crossing could be used for oak tree replacement. Additional plantings along the creek corridor could provide areas for oak replacement while also augmenting receding oak populations. This wide curving alignment straightens out near Nicolaus Road where a future overcrossing is planned. D13 then continues northward through agricultural areas until it combines with the D1 alignment.

The major difference between the D alignments is that D1 is slightly farther northward, disrupting the rural Rockwell Lane subdivision. Two home sites would be demolished and other homes may be as close as 30.5 to 76 m (100 to 250 ft) away from the proposed alignment.

The pooling, tributary area of Markham Ravine on the south side of the proposed D1 alignment allows attractive views for Lincoln Bypass travelers during the wet months. In addition, this alignment cuts through the southern tip of a long eucalyptus windbreak, adding an immediate vertical visual element directly adjacent to the right-of-way.

D1 has the same overall visual qualities of D13 except for the area near Auburn Ravine. The rural neighborhood at the bend in Moore Road is now entirely on the north side of the proposed route. Visually and socially, it is wise to not break up this neighborhood. By leaving the enclave of homes intact, the foreground views of rustic home sites tucked inside oak woodland provide visual integrity and promote the rural quality of this region. Once development occurs, the rural home sites may disappear, leaving mixed-use development. D1 joins with D13 just past Nicolaus Road.

All of the longer alignments (**A5C1, AAC2, D1 and D13**) generally cross the same area from Wise Road on to where they join with existing SR 65. These alignments either cross over or weave through small hills north of Coon Creek. These low-lying foothills exaggerate the feeling of traveling and passing through an area due to their vertical relief upon otherwise horizontal fields. The alignments cross extensive vernal pools, agriculture and non-native grasslands for over 2.4 km (1.5 mi) before arriving at the unique, mile-wide rolling foothill between Dalby and Riosa Rds.

Even though these alignments tie into existing SR 65 at different locations before reaching the Bear River, they are within 457 m (1,500 ft) of each other. The D1 and D13 alignments go through existing fruit and nut orchards whereas A5C1 and AAC2 do not. Disturbing the existing orchards and their geometric plant spacing will cause the visual quality and character to be altered. However, orchards normally create interesting, geometric views from the roadway.

#### **4.11.1 Avoidance and Minimization Measures to Reduce Visual Impacts**

These measures encompass the enhancement of positive effects as well as the reduction or elimination of negative effects. The goal is to restore the indigenous appearance to areas affected by construction and to form the highway so it blends into adjacent terrain. In achieving this goal, the highway should appear to be a part of the natural landscape. The most effective measure is to minimize and avoid project impacts by designing the project with as little disturbance to the land as possible.

#### **Oak Resolutions and Regulations**

The California Senate passed a resolution effective September 1, 1990 protecting heritage oak stands. State agencies shall “assess and determine the effects of their land use decisions or actions within any oak woodlands.” State agencies should “preserve and protect native oak woodlands to the maximum extent feasible... or provide for



replacement plantings" according to SCR17. There are eight stands of oaks meeting the criteria as heritage trees within the Study Area. In addition, Placer County adopted a tree preservation ordinance in October of 1991. This ordinance was established to preserve and protect the remaining native oak and other species of trees within Placer County. Within the project area, landmark trees and trees within a riparian zone provide the majority of trees affected by this ordinance.

### **Oak Removal**

Tree removal will be kept to a minimum. Because of the loss in change of spatial enclosure and the number of heritage oak stands, it is particularly important to leave existing trees as close to the highway as safety will allow. Prior to clearing operations, trees needing to be removed will be individually marked for cutting and all other trees will be protected from damage. Identification of a preferred alignment is not an easy task due to many constraints, some of which include oak preservation, wetland habitats, potential endangered species and scenic quality considerations. All proposed alignments remove portions of existing mature oak woodlands. The total dbh varies between the alignments but D1 has the least oaks being removed and AAC2 has the most oaks being removed. Below approximates total oak removal for each alignment:

|                |   |
|----------------|---|
| D1 alignment   | 17.8 m (700 in) of oaks to be removed   |
| D13 alignment  | 43.2 m (1,700 in) of oaks to be removed |
| A5C1 alignment | 68.6 m (2,700 in) of oaks to be removed |
| AAC2 alignment | 85.1 m (3,350 in) of oaks to be removed |

### **Oak Replacement**

Replacement of oak woodland habitat will be necessary under SCR 17 for the Lincoln Bypass. It is best to locate replacement trees in areas where existing oaks have been removed. Creek corridors also provide an exceptional location to augment existing oak woodlands with additional replacement oaks. In addition, wider rights-of-way allow naturalistic arrangement of replacement oaks while also enhancing visual quality and character. Caltrans Landscape Architects will provide re-vegetation plans, which will further enhance the Lincoln Bypass. More information on oak woodland replacement can be found in Section 4.8.8.

### **Vegetation Preservation**

The natural vegetative layers of tree canopy, understory vegetation of small trees and shrubs, groundcovers, native grasses and natural mulches will be re-established.

#### **4.11.2 Erosion Control**

Potential damage from erosion and runoff can be severe. Sedimentation barriers such as simple hay bales or soil filter fabrics attached to fences (silt fences) can help prevent erosion. To establish effective re-vegetation on slopes, topsoil will be collected from the project site before construction, stockpiled, and later applied to the completed slopes. Erosion control plans can be custom-tailored to specific sites by a landscape architect. Erosion control is discussed in depth in the Water Quality Section of this chapter.

If re-vegetation is not accomplished, roadside scars will become prominent on cut and fill slopes. The magnitude of these visual impacts depends upon how the slopes are treated. All slope treatments will blend with existing features, simulating natural forms. This consists of rounding the top and edges of the cuts and fills to present a softer transition line between constructed and existing slopes. Particularly where a significant tree or group of trees can be saved, slopes could be cut steeper to preserve them. In addition, slopes will be designed to be flat enough to readily re-vegetate them. A 4:1 slope is recommended. This means that for every four feet of horizontal length the slope will rise vertically one foot.

Contour grading may increase the overall size and length of graded areas, requiring adequate right-of-way to be wider than the 70 m (230 ft) as proposed. The unique, mile-wide foothill near Dalby and Riosa Roads is a prime example where contour-grading principles will be employed along with establishing wider right-of-way, smoothing the natural to standard transition edge along the roadway.

#### **Bridges and Other Structures**

Special attention will be given to structures since they have a strong impact on the visual quality of a highway. All structures will be aesthetically pleasing when viewed from the road and other viewpoints. Landforms will blend into bridge abutments to maintain visual continuity for the motorist. Structures will complement the natural landscape in color and not dominate existing landforms.

#### **Soundwalls**

Soundwalls are an important element in highway design where homes and other noise-sensitive properties are close to the right-of-way. The compatibility between highways and residential areas is substantially improved by the provision of attractively designed soundwalls. Planting is effective in complementing and softening the appearance of soundwalls. Visual impacts must be considered once final locations of soundwalls are determined.

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## 5 RELATIONSHIP BETWEEN LOCAL SHORT TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG TERM PRODUCTIVITY

This project is consistent with the Placer County Transportation Planning Agency Regional Transportation Plan, which outlines the ultimate transportation plan for the region, including local road and highway improvements. This Plan was developed to accommodate current and proposed land uses and the associated projected travel. Construction of the project will result in long-term environmental impacts such as:

- Removing agricultural land from production.
- Destroying vernal pools and the associated flora and fauna.
- Destroying many large, heritage oak trees.

Conversely, the project would support uses of the land consistent with highway uses such as residential, commercial and industrial land use, bringing economic expansion to the area. The long-term productivity of the City of Lincoln would be:

- Decreased congestion within the downtown core.
- Improving the quality of life for both the city residents and the commuters once faced with delays during peak hours within the city limits.
- In addition, efficient inter-regional movement of goods, services and people would be enhanced by the addition of a bypass around the City of Lincoln.
- Mitigation for the Bypass would contribute to the preservation of some agricultural lands and wetland habitat. Preservation of oaks will occur at a 2:1 ratio. Saplings will be planted to replace the oak trees.

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## 6 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION

Implementation of the proposed action involves a commitment of a range of natural, physical, human and fiscal resources. Land used in the construction of the proposed facility is considered an irreversible commitment during the time period that the land is being used for a highway facility. However, if a greater need arises for use of the land or if the highway facility is no longer needed, the land can be converted to another use. At present there is no reason to believe such a conversion will ever be necessary or desirable.

Considerable use of fossil fuels, labor and highway construction materials such as cement, aggregate and bituminous material would be expended. Additionally, large amounts of labor and natural resources would be used in the fabrication and preparation of construction materials. These materials are generally not retrievable. However, they are not in short supply and their use will not have an adverse effect upon the continued availability of these resources. Any construction will also require a substantial one-time expenditure of both State and Federal funds which are not retrievable.

In addition, for much of the project area, highway use will supplant agricultural use, possibly changing the land use in that area forever by providing a means to develop residential housing. Some the land converted to highway use is prime farmland, which cannot easily be changed back into farmland once the road is built. This conversion is already happening via the approval of development permits by the City of Lincoln.

Vernal pools will also be irretrievably lost to the highway project. Vernal pools are tens of thousands years in the making, and require specific geologic and topographic conditions in order to occur. Success in reproducing and replacing vernal pools has been uncertain. Together with the loss of the vernal pools will be the plants and animals that inhabit vernal pools, such as the vernal pool fairy shrimp. Due to the incremental loss of their habitat throughout the Sacramento Valley region, their continued existence is uncertain.

The commitment of these resources is based upon the concept that residents in the immediate area, State and region will benefit by the improved quality of the transportation system. These benefits will consist of improved accessibility and safety, savings in time and greater availability of quality services, which are anticipated to outweigh the commitment of these resources.

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## 7 COMMENTS AND COORDINATION

Caltrans has conducted a substantial amount of public outreach on this project over the decade that it has been in development. This chapter will discuss coordination with the public and federal, state and local agencies, including the NEPA/404 coordination.

### 7.1 Cooperating Agencies

A cooperating agency is any agency, other than the lead agency, that has jurisdiction by law or special expertise with respect to the environmental impacts expected to result from a proposal. The following agencies have agreed to be cooperating agencies under NEPA. Letters from the USACE and FWS are located in Appendix A.

- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service

### 7.2 Notice of Preparation and Notice of Intent

A Notice of Intent was published in the Federal Register on June 28, 1990 and a Notice of Preparation was distributed by the Office of Planning and Research (OPR) on June 27, 1990. Copies of these notices are located in Appendix B. The following state agencies received a copy of this Notice either through the OPR or through Caltrans. Copies of the letters can be found in Appendix C. Table 7-1 lists the responses to the NOI and NOP and summarizes the agencies concerns.

California Air Resources Board

California Dept. of Conservation

California Dept. of Fish and Game

California Dept. of General Services

California Dept. of Health

California Dept. of Housing and Community Development

California Dept. of Parks & Recreation, Office of Historic Preservation

California State Lands Commission

California Water Resources Control Board

Central Valley Region Water Quality Control Board

Native American Heritage Commission

Regional Air Pollution Control District/Air Quality Management District

The following agencies responded to these Notices and requests for information:

**Table 7-1 Agencies Responding to Notice of Intent and Notice of Preparation**

| Agency   | Date                            | Issues/Concerns  |
|--|---------------------------------|--|
| <b>Federal Government</b>  |                                 |  |
| U.S. Dept. of Interior, Bureau of Mines                                | June 12, 1990<br>August 2, 1990 | Provided a print out locating minerals and mineral claims.   |
| U.S. Dept. of Interior, Bureau of Indian Affairs                       | July 24, 1990                   | No Indian Lands under the jurisdiction of this agency are involved.  |
| <b>State Government</b>  |                                 |  |
| California Dept. of Fish and Game                                      | May 26, 1989                    | Suggested some issues they will be looking for in the NES.   |
| California Dept. of Fish and Game                                      | May 11, 1990                    | Issues: Riparian habitat, Swainsons' hawk, vernal pools, valley elderberry longhorn beetle, giant garter snake, chinook salmon. They discussed requirements for mitigation.  |
| California Dept. of Fish and Game                                      | July 23, 1990                   | Referencing the May 11, 1990 letter for concerns.  |
| California Dept. of Boating and Waterways                              | July 6, 1990                    | No comments.   |
| Sacramento Area Council of Governments                                 | July 10, 1990                   | No concerns of an environmental nature. The Lincoln Bypass is included in the 1990 Regional Transportation Improvement Program, and also conforms with the 1982 Regional Air Quality Plan.                                     |
| California Regional Water Quality Control Board, Central Valley Region | July 12, 1990                   | The DEIR should; address the implementation of an enforceable erosion control plan, incorporate appropriate grading plan measures, and designate responsible parties for any phase of this project.                            |
| Dept. of Parks and Recreation, Office of Historic Preservation         | January 30, 1995                | Finding of Effect. Agreed that this project would not effect the historic properties in the vicinity.  |
| <b>County &amp; Local Governments</b>                                  |                                 |  |
| Placer County Dept. of Public Works                                    | July 25, 1990                   | Impacts to county roads should be addressed. There is a concern about encroachment into agricultural lands by the freeway, and the conversion of agricultural lands due to growth pressures from the presence of the new road. |

### 7.3 Coordination with Agencies

Coordination with the resource agencies is ongoing. The resource agencies have been invited to Project Development Team (PDT) meetings, provided copies of minutes

of those meetings and have been kept up to date on the current status of this project. As personnel changed within the different Resource Agencies, additional material has been sent to the new contact person. Table 7-2 lists the coordination that has taken place with other State, Federal and local agencies. Copies of the letters can be found in Appendix D.

**Table 7-2 Coordination with Agencies**

|  |                    |
|--|--------------------|
| <b>U.S. Fish and Wildlife Service</b>  |                    |
| Letter to James McKevitt requesting guidance on USFWS concerns.  | April 12, 1990     |
| Letter from Wayne White responding to April 12, 1990 letter.   | June 29, 1990      |
| Letter from David Harlow responding to request of July 21, 1998 for information.   | August 13, 1998    |
| Letter from Karen Miller responding to March 12, 2000 telephone request for comments on survey protocol.   | April 27, 2000     |
| Letter from Karen Miller responding to August 28, 2000 request for information on endangered and threatened species  | September 11, 2000 |
| <b>U.S. Dept. of Commerce, National Marine Fisheries Service</b>   |                    |
| Letter to John Baker, Fisheries Biologist requesting concurrence that the project is not likely to adversely affect CV Steelhead or adversely modify it's Critical Habitat | May 10, 2004       |
| Letter from Rodney R. McInnis concurring on "not likely to adversely affect" determination.  | May 19, 2004       |
| <b>U.S. Army Corps of Engineers:</b>   |                    |
| Letter from Tom Coe, Chief, Regulatory Unit 1, regarding wetlands manual.  | August 30, 1991    |
| Letter to Tom Coe, responding to letter of August 30, 1991   | September 27, 1991 |
| Letter from Tom Coe regarding wetlands verification  | September, 1991    |
| <b>U.S. Dept. of Agriculture, Natural Resources Conservation Service:</b>  |                    |
| Letter from Clifford Heitz, District Conservationist.  | June 22, 1999      |
| Farmland Conversion Impact Rating Forms.   | May 13, 2001       |
| <b>California Dept. of Fish and Game:</b>  |                    |
| Letter from James Messersmith, Regional Manager responding to request for information.   | May 26, 1989       |



|   |                   |
|---|-------------------|
| Letter to Jerry Mench requesting CDFG concerns.   | April 12, 1990    |
| Letter from James Messersmith responding to request.  | May 11, 1990      |
| <b>California Dept. of Parks &amp; Recreation, State Historic Preservation Office</b>   |                   |
| Letter from Kathryn Gualtieri, State Historic Preservation Officer, concurring that Fickewirth Ranch and Sheridan Cash Store are eligible for National Register.  | October 22, 1991  |
| Letter from Cherilyn Widell, State Historic Preservation Officer, concurring that Fickewirth Ranch and Sheridan Cash Store are eligible for National Register and with the phasing of investigation for the archaeological sites. | August 8, 1994    |
| Letter from Cherilyn Widell, State Historic Preservation Officer, responding to Section 106 request.  | January 30, 1995  |
| Letter from Dr. Knox Mellon, State Historic Preservation Officer, responding to Section 106 request. Concurs with findings.   | November 19, 2002 |
| Letter to Mr. Milford Wayne Donaldson, State Historic Preservation Officer, requesting concurrence on Finding of No Adverse Effect and informing him of the use of the de minimus standard. Concurs with findings on 2/16/06.     | February 2, 2006  |
| <b>Placer County:</b>   |                   |
| Letter to Board of Supervisors and City Council advising them of this project.  | July 24, 1989     |
| Letter to Property Owners advising of this project.   | July 24, 1989     |

## 7.4 Public Outreach

Additional correspondence from the residents of Lincoln and surrounding areas can be found in the "Public Outreach" notebook located in the Caltrans District 3 office in Sacramento. A summary of the public hearings, open houses and informational meetings that have been held for this project are listed in Table 7.3. Three newsletters were sent out to the residents of Lincoln on April 12, 1990, March 1991 and March 1993. Listed in the table below are the public meetings that were held for the project.

**Table 7-3 Public Meetings**

| When              | Where                                | What   |
|-------------------|--------------------------------------|--|
| November 24, 1987 | Caltrans District Office, Marysville | Informational meeting with the City, Caltrans, property owners, developers |
| November 16, 1989 | Lincoln City Hall                    | Lincoln City Council Meeting   |

|                    |                               |                                    |
|--------------------|-------------------------------|------------------------------------|
| May 1, 1990        | McBean Park Pavilion, Lincoln | Public Drop in Workshop            |
| April 18, 1991     | McBean Park Pavilion, Lincoln | Public Drop in Workshop            |
| September 22, 1999 | McBean Park Pavilion, Lincoln | Public Drop in Workshop            |
| January 12, 2000.  | Sheridan                      | Sheridan Municipal Council Meeting |
| December 12, 2000  | McBean Park Pavilion, Lincoln | Public Open House                  |

The format for the public drop-in workshops was informal. Exhibits were set up around the room, with Caltrans representatives available to answer questions. Comment Cards were available, as well as a place to sit down and fill them out. Cookies and coffee were provided by the Lincoln Lions Club. The Comment Cards are included in the Public Outreach Notebook and available for review at the Caltrans District 3 Sacramento office. Approximately 80 citizens attended the first meeting, and 18 commented. In general, the comments were favorable towards the project, although one comment was negative. The second workshop had 90 participants, and 19 provided comments. The comments were all in agreement with the project, and favored the D corridor.

The most recent open house for this project was held on September 22, 1999. There were over 400 people in attendance and 226 Comment Cards were received at the open house. Ten additional comments came in the mail after the open house. A petition was submitted to Caltrans, signed by 314 people in opposition of the shorter A alignment due to the impacts on residents in that area and the feeling that it would divide the city.

Comments at that public workshop were overwhelmingly in favor of the D corridor, and evenly split between D1 and D13. Many of the people in favor of the D1 alignment were located in the Brookview Terrace subdivision, which would be more affected by the D13 alignment. Approximately 40 people suggested a blending of the D1 and D13, by taking D1 up to Nelson, then going with D 13.

Nine people were in favor of the A alignments and 21 were in opposition to the A alignments. A total of nine people were in opposition to the D alignments. Nine people did not feel a bypass was necessary and were in opposition to the whole project, one comment suggested rapid transit. Other concerns expressed in the Comment Cards were the impacts of noise and lights on this quiet community.

The following letters of comment were received from members of the public:

Elisabeth H. Fullerton, dated December 5, 1987

Edwin and Carol Scheiber, dated January 25, 1988

Elisabeth H. Fullerton, dated January 11, 1989

Mr. and Mrs. Edwin A. Noyes, Jr., dated January 21, 1989

Edwin and Carol Scheiber, dated July 19, 1990

Randy Collins, The Sammis Company, dated May 22, 1991

A public open house was held on December 18, 2001, during the circulation of the draft environmental document. Approximately 300 people signed in and 176 submitted comments. The comments ranged in nature from supportive of the project to concern over the loss of farmland and the rural feel of the area. The resource agencies concerns were focused on loss of habitat for vernal pools and their denizens, the Swainson's hawk and growth inducement. Copies of the comments and responses to comments can be found in Appendix K.

## 7.5 NEPA/404 coordination

In 1994, USACE, EPA, FHWA, FWS, NMFS and Caltrans signed a formal Memorandum of Understanding (MOU) that integrates the NEPA process and Clean Water Act Section 404 procedures, as well as improves coordination among stakeholder agencies. The NEPA/404 Integration process was designed to implement Section 404 more effectively in its efforts to preserve wetlands and the species of plants and animals that depend on this type of habitat.

Under the guidelines of the NEPA/404 Integration process, signatory agencies are to agree to the project's "Purpose and Need" Statement, the criteria for selecting the project alternatives and the Least Environmentally Damaging Practicable Alternative (LEDPA). The guidelines also specify that signatory agencies are to agree to the alternatives that are to be studied, early in the environmental review process. Letters documenting agreement from the agencies on the Purpose and Need, the range of alternatives and the criteria for selecting the alternative can be found in Appendix E and are listed in Table 7-4 below.

A LEDPA was chosen and concurrence was received from EPA and USACE on July 9 and August 8, 2003 (see Table 7-4). The USACE published a Public Notice informing the public of Section 404 involvement in June 2005 and comments from that notice are being evaluated.

While the Final Environmental Impact Statement/Report was being prepared, a preferred alternative in compliance with the section 404(b)(1) guidelines was agreed upon. This alternative was the D13 North Modified alternative. Mitigation has been proposed and agreed upon, and a non-jeopardy opinion was given by the FWS on February 2, 2005. Table 7-4 details the NEPA/404 coordination to date.

**Table 7-4 NEPA/404 and Section 7 Coordination**

| <b>When</b>       | <b>Who to Whom</b>                | <b>What</b>  |
|-------------------|-----------------------------------|--|
| April 24, 1994    | FHWA/Caltrans to USACE, EPA, FWS, | Letter requesting concurrence on the purpose and need, criteria for selection of alternatives, and description of alternatives to be evaluated in the DEIR/S.  |
| May 5, 1994       | FHWA/Caltrans, EPA, USACE, FWS    | Meeting to discuss project.  |
| May 12, 1994      | FHWA/Caltrans to USACE, EPA, FWS  | Letter requesting concurrence on the purpose and need, criteria for selection of alternatives, and description of alternatives to be evaluated in the DEIR/S.  |
| June 17, 1994     | FWS to FHWA/Caltrans              | FWS needs more information. Purpose & need not clearly identified, would like to see another alternative that doesn't affect wetlands, need a complete list of criteria and alternatives that were discarded at previous planning stages.                              |
| June 28, 1994     | EPA to FHWA/Caltrans              | Concurrence that the range of alternatives meets the requirements for Section 404 and the criteria for the selection of alternatives to be evaluated is adequate. However, they did not agree that the purpose and need was adequate, and that the LEDPA was accurate. |
| June 30, 1994     | FHWA/Caltrans, FWS                | Meeting to discuss issues raised in FWS comment letter.  |
| February 18, 1997 | FHWA/Caltrans to USACE EPA FWS    | Preliminary information for a meeting to obtain concurrence.   |
| February 27, 1997 | FHWA/Caltrans, USACE FWS          | Meeting to discuss project.  |
| March 6, 1997     | FHWA/Caltrans, USACE, EPA, FWS    | Pre-application Interagency Meeting  |
| March 17, 1997    | FHWA/Caltrans to USACE, EPA, FWS  | Requesting concurrence again.  |
| March 21, 1997    | FWS, to FHWA/Caltrans             | Concurrence on projects purpose and need, range of alternatives and criteria for selection of alternatives.  |
| April 7, 1997     | USACE, to FHWA/Caltrans           | Concurrence on purpose & need, range of alternatives, design parameters.   |
| May 6, 1997       | EPA, to FHWA/Caltrans             | Concurrence on purpose & need, range of alternatives, design parameters.   |

| <b>When</b>                  | <b>Who to Whom</b>              | <b>What</b>  |
|------------------------------|---------------------------------|--|
| February 7, 2000             | FHWA/Caltrans, USACE, EPA, FWS, | Meeting to re-acquaint the agencies with the project, review the Natural Environment Study and update the agencies on the project.   |
| November 15-January 15, 2001 | Caltrans                        | Circulation of Draft Environmental Impact Report/Statement   |
| December 2001                | Caltrans                        | FHWA/Caltrans identifies D13 North as the preferred alternative  |
| April 20, 2001               | FHWA/Caltrans, USACE, EPA, FWS, | Meeting to present the Habitat Mitigation and Monitoring Proposal.   |
| August 29, 2002              | FHWA/Caltrans and EPA           | Caltrans and EPA have an initial meeting on the LEDPA. Caltrans agrees to prepare a revised Alternatives Analysis prior to requesting concurrence on LEDPA   |
| September 24, 2002           | FHWA/Caltrans and EPA           | Caltrans submitted a revised alternatives analysis to EPA.   |
| September 30, 2002           | FHWA/Caltrans and EPA           | Caltrans/FHWA submits request for concurrence that includes additional information regarding impacts, development patterns and habitat fragmentation.  |
| October 7, 2002              | FHWA/Caltrans and EPA           | EPA receives from Caltrans the revised Alternatives Analysis (dated Sept 24, 2002), a request for LEDPA concurrence on D13N (dated Sept 30, 2002), and information on the General Plan for the City of Lincoln. The deadline for LEDPA concurrence is set for NOV 18 <sup>th</sup>   |
| October 31, 2002             | FHWA/Caltrans and EPA           | A meeting ensued with EPA, City of Lincoln, Placer County and Caltrans to discuss growth in the region. From the information that was presented, EPA requested further information pertaining to development, Williamson Act contracts, development potential and growth pressure in relation to interchanges and intersections.   |
| November 6, 2002             | FHWA/Caltrans and EPA           | Email received from EPA requesting information on the practicability of the A alternatives.  |
| December 5, 2002             | FHWA/Caltrans and EPA           | Caltrans/FHWA submits a second request for concurrence and includes supplemental information to support LEDPA. The supplemental information includes impacts to key resources, community impacts of the AC alternatives, discussion on the growth in Lincoln and surrounding areas and Placer Legacy activities. Updated maps from Placer County and the City of Lincoln were also submitted in package. |

| <b>When</b>       | <b>Who to Whom</b>    | <b>What</b>   |
|-------------------|-----------------------|---|
| December 20, 2002 | FHWA/Caltrans and EPA | Caltrans submits email to EPA answering additional questions regarding LEDPA regarding residential housing impacts. Analysis had included impacts to houses that were in various planning or construction stages and EPA requested verification of actual built housing versus not built.   |
| January 13, 2003  | FHWA/Caltrans and EPA | Meeting with EPA, USACE, City of Lincoln, Congressman Doolittle's office and Caltrans to discuss LEDPA. EPA requests further information on cumulative and indirect analysis and how they relate to natural resources on the D alignment, why the AC alternatives were not practicable, cost estimates for right-of-way, clarification on necessity of interchanges at Wise Road and Nelson and information on impacts on homes along the AC alignment. Caltrans agrees to develop a work plan that will be presented to EPA and USACE to ensure that concerns are addressed regarding LEDPA concurrence. |
| January 16, 2003  | FHWA/Caltrans and EPA | Letter from EPA agreeing to postponement of the January 24, 2003 deadline for EPA concurrence on LEDPA and requesting further information on "A" alternatives and a work plan.  |
| January 27, 2003  | FHWA/Caltrans and EPA | Caltrans provides EPA information on direct and indirect impacts for the A alignments and Foskett Ranch.  |
| February 4, 2003  | FHWA/Caltrans and EPA | FHWA/Caltrans provides EPA information on the D13 alignment and the proposed interchanges. Caltrans submits showing the criteria used to determine the practicability of the AC alignments.   |
| February 13, 2003 | FHWA/Caltrans and EPA | EPA sends reference materials and suggestions on how to address cumulative and secondary impacts of transportation projects   |
| February 25, 2003 | FHWA/Caltrans and EPA | EPA sends letter with concerns over constraints within the A corridor.  |
| March 20, 2003    | FHWA/Caltrans and EPA | FHWA/Caltrans submits work plan for discussion.   |
| March 21, 2003    | FHWA/Caltrans and EPA | Meeting with EPA, Caltrans, FHWA, City of Lincoln, Placer County Transportation Planning Agency and USACE to discuss work plan, LEDPA process, design variation and communication protocol.   |
| March 26, 2003    | FHWA/Caltrans and EPA | EPA submits feedback on Caltrans work plan.   |

| <b>When</b>       | <b>Who to Whom</b>                     | <b>What</b>  |
|-------------------|--|--|
| March 27, 2003    | FHWA/Caltrans and EPA                  | Weekly teleconference meetings between Caltrans, USACE and EPA begin. EPA submits final changes to work plan.  |
| May 5, 2003       | FHWA/Caltrans and EPA                  | Caltrans submits work plan to EPA.   |
| May 9, 2003       | FHWA/Caltrans and EPA                  | Teleconference meeting with EPA regarding analysis. EPA discusses concern over the lack of conclusion regarding indirect and cumulative impacts, the design variation in relation to the initial phase versus the final facility and the design changes regarding the overcrossing. Caltrans clarifies design changes. |
| May 15, 2003      | FHWA/Caltrans and EPA                  | Teleconference meeting with EPA, FHWA and Caltrans to discuss analysis.  |
| July 9, 2003      | FHWA/Caltrans and EPA                  | Letter from EPA concurring with D 13 North as the LEDPA  |
| August 8, 2003    | FHWA/Caltrans and USACE                | Letter from USACE concurring with D13 North as the LEDPA   |
| February 15, 2004 | FHWA/Caltrans and FWS, NMFS            | Submitted BA to NMFS and FWS   |
| March 17, 2004    | FHWA/Caltrans and FWS, NMFS            | Received informal comments from FWS.   |
| April 28, 2004    | FHWA/Caltrans, FWS, DFG and USACE      | Field meeting at Aitken Ranch to discuss mitigation site   |
| April 30, 2004    | FHWA/Caltrans, FHWA and FWS            | Caltrans responds in letter to FWS comments  |
| May 4, 2004       | FHWA/Caltrans, FHWA and FWS            | Meeting to discuss project and submit additional information   |
| May 10, 2004      | FHWA/Caltrans and FWS                  | Submittal of revised BA and request for formal Section 7 consultation  |
| May 10, 2004      | FHWA/Caltrans and NMFS                 | Submittal of revised BA and request for formal consultation  |
| May 19, 2004      | FHWA/Caltrans and NMFS                 | Received concurrence on “Not Likely to Adversely Affect” determination ending formal consultation  |
| May 24, 2004      | FWS and FHWA/Caltrans                  | Received letter requesting additional project information  |
| June 22, 2004     | FHWA/Caltrans, FWS and DFG             | Field meeting in Lincoln to discuss project and it’s impacts   |
| July 20, 2004     | FHWA/Caltrans, City of Lincoln and FWS | Meeting to discuss revised impacts and mitigation requirements   |



| <b>When</b>        | <b>Who to Whom</b>                          | <b>What</b>  |
|--------------------|---|--|
| September 7, 2004  | FHWA/Caltrans and FWS                       | FHWA submits letter containing additional project information and a second request for formal consultation                           |
| September 16, 2004 | FHWA, Caltrans, LSA and FWS                 | Meeting to discuss project indirect and direct impacts and recommendations were given to offset these impacts                        |
| November 1, 2004   | FHWA, Caltrans, USACE, EPA, City and County | Meeting at Congressman's office to discuss project impacts and compensation measures   |
| November 5, 2004   | FHWA, Caltrans, USACE, EPA, City and County | Meeting to discuss additional compensation and conservation measures   |
| November 19, 2004  | FHWA/Caltrans, FWS, EPA and USACE           | Caltrans submits Draft Mitigation and Monitoring Plan (MMP) for project to obtain concurrence from agencies                          |
| December 17, 2004  | FHWA/Caltrans Caltrans and EPA              | Received letter of concurrence on the Conceptual Mitigation Plan that includes recommendations for Final plan                        |
| December 27, 2004  | FHWA/Caltrans and USACE                     | Received letter providing concurrence on draft Mitigation and Monitoring Plan and provides additional recommendations for Final plan |
| January 7, 2005    | FWS, FHWA and Caltrans                      | A draft BO was submitted to FHWA that outlined mitigation and conservation requirements  |
| February 2, 2005   | FWS, FHWA and Caltrans                      | A Final BO was submitted to FHWA and Caltrans that outlines final mitigation and conservation requirements                           |
| December 21, 2005  | FWS, FHWA and Caltrans                      | Caltrans requests to amend the BO  |
| March 21, 2006     | FWS, FHWA and Caltrans                      | FWS submits an amended BO.   |

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## 8 LIST OF AGENCIES, ORGANIZATIONS AND PERSONS TO WHOM COPIES OF FINAL EIR/S WERE SENT

### ELECTED OFFICIALS

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#### U.S. CONGRESSMAN

Honorable John Doolittle  
1228 Longworth House Office Building  
Washington, D.C. 20515

#### U.S. SENATORS

Honorable Dianne Feinstein  
Hart Senate Office BLDG., Suite 331  
Constitution Ave. & 2nd Street, NE  
Washington, D.C. 20515

Honorable Barbara Boxer  
Hart Senate Office BLDG., Suite 112  
Constitution Ave. & 2nd Street, NE  
Washington, D.C. 20515

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#### STATE ASSEMBLYMAN

Honorable David Knowles  
The State Assembly  
State Capitol  
Sacramento, CA 95814

#### STATE SENATOR

Honorable Tim Leslie  
The State Senate  
State Capitol  
Sacramento, CA 95814

### FEDERAL AGENCIES

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Ms. Duane James, Chief  
**U.S. Environmental Protection  
Agency Region IX**  
Attn: Nancy Levin  
75 Hawthorne St.  
San Francisco, CA 94105-3901

Mr. Tom Cavanaugh, Acting Chief  
**U.S. Army Corps of Engineers  
Sacramento District, Regulatory  
Section**  
Attn: Tom Cavanaugh  
1325 J St.  
Sacramento, CA 95814-6340

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Wayne S. White, Field Supervisor  
**U.S. Fish and Wildlife Service,  
Ecological Services**  
Attn: Jerry Bielfeldt,  
Sacramento Field Office  
2800 Cottage Way, W-2605  
Sacramento, CA 95825

Mike Acituno, Supervisor  
**U.S. National Marine Fisheries  
Service**  
Attn: Kelly Finn  
650 Capital Mall, Suite 6066A  
Sacramento, CA 95814

### STATE AGENCIES

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State Clearinghouse  
**Office of Planning and Research**  
1400 10th Street, Room 121  
Sacramento, CA 95814

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**California Dept. of Fish and Game,  
Region 2**  
Sandy Moley, Regional Manager  
Attn: Jeff Finn  
1701 Nimbus Rd. Suite A  
Rancho Cordova, CA 95670

Executive Officer, **State Water  
Resources Control Board**  
901 P Street  
Sacramento, CA 95814

State Historic Preservation Officer  
**Office of Historic Preservation**  
Dept. of Parks and Recreation  
P.O. Box 942896  
Sacramento, CA 94296-0001

Executive Officer, **State Air Resources  
Board**  
1102 Q Street  
Sacramento, CA 95814

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#### LOCAL AND COUNTY GOVERNMENT AGENCIES

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**City of Lincoln City Council**  
640 5<sup>th</sup> Street  
Lincoln, CA 95648

**City of Lincoln Planning Commission**  
1530 3rd Street, Suite 211  
Lincoln, CA 95648

**Placer County Board of Supervisors**  
175 Fulweiler Avenue  
Auburn, CA 95603

**Placer County Planning Director**  
11414 B Avenue  
Auburn, CA 95603

**Placer County Director of Public  
Works**  
11444 B Avenue  
Auburn, CA 95603  
Director of Public Works

**Sheridan Municipal Advisory  
Committee**  
Attention Ms. Nancy Evans  
P.O. Box 356  
Sheridan, CA 95681

**South Sutter Water District**  
Mr. Robert L. Melton, General  
Manager/Secretary,  
2464 Pacific Avenue  
Trowbridge, CA 95659

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#### CIVIC AND MISCELLANEOUS ORGANIZATIONS

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Executive Director  
**Sacramento Area Council of  
Governments**  
3000 S Street, Suite 300  
Sacramento, CA 95816

Mr. Celia McAdam, Executive Director  
**Placer County Local Transportation  
Planning Agency**  
835 Lincoln Way, Suite 109  
Auburn, CA 95604

**Lincoln Area Chamber of Commerce**  
1530 3rd Street  
Lincoln, CA 95648

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#### INDIVIDUALS

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**Carol Scheiber**  
Moore Road  
Lincoln, CA

**FINAL EIS WAS MADE AVAILABLE AT:**

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**City of Lincoln City Hall**  
1390 First St.  
Lincoln, CA 95648

**Caltrans District 3, Sacramento**  
2389 Gateway Oaks Dr.  
Sacramento, CA 95833

**Lincoln Public Library**  
590 Fifth St.  
Lincoln, CA 95648-1854

**Caltrans District Office, Marysville**  
711 B St.  
Marysville, CA 95901

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## 9 LIST OF PREPARERS

### CALTRANS

**Katrina Pierce**, North Region Environmental Division Chief

**James R. Anderson, P.E.**, Senior Transportation Engineer. MS & BS Civil Engineering, California State University at Sacramento, 10 years experience in Transportation Engineering. Project Manager

**Leo Rubio, P.E.**, P.E., Senior Transportation Engineer. BS Civil Engineering, Sacramento State University. 8 years experience in Civil Engineering.

**Cornelis Hakim, P.E.**, Transportation Engineer. BS Civil Engineering, HTS te Haarlem, HTI te Amsterdam (Netherlands). 16 years experience airport, transportation and construction engineering. Transportation Engineer. Project Engineer

**Ken Van Velsor**, Senior Environmental Planner. Caltrans North Region Environmental Management. BA Cultural Anthropology, San Francisco State University. 19 years experience working for Caltrans in Surveying, Design, Transportation Planning and Environmental Management. Environmental Manager

**Karen McWilliams**, Senior Environmental Planner. B.A. Environmental Studies, California State University, Sacramento. 12 years experience in Environmental Documents. Environmental Coordinator and Principal Writer

**John Ballentyne**, Right of Way Agent. BS Management, California State University, Chico. 12 years experience in real estate, 2 years as a Right of Way Agent. Draft Relocation Impact Study

**Cynthia Gause**, Environmental Planner. B.S. Environmental Science, California State University, Sacramento; seven years experience conducting environmental analysis and preparing environmental documentation. *Socioeconomic Report*

**Christina Lynch**, Associate Environmental Planner. B.S. Accounting, California State University, Sacramento; Environmental course study, UC Davis; 2 years experience conducting environmental analysis and preparing environmental documentation. *Environmental Coordinator and Principal Writer of Final Document, Indirect and Cumulative Impact Analysis.*

**Amy Kundert**, Environmental Planner BA Environmental Planning, Sacramento State University; 6 years experience conducting environmental analysis and preparing environmental documents. *4(f) Evaluation*

**Don Schmoldt**, Associate Environmental Planner. M.A. Natural Sciences, San Jose State University; B.S. Wildlife Management, Humboldt State University. 15 years experience as an Environmental Consultant in Central California, specializing in special-status wildlife species issues. *Natural Environment Study Oversight*

**Steven P. Menefee**, Transportation Engineer D3 Hydraulics Branch, AS Water and Wastewater Technology Kirkwood College, 22 years experience in Civil Engineering *Location Hydraulics Report*

**Gary Reinoehl**, Associate Environmental Planner, MA Cultural Resources Management, Sonoma State University. 15 years experience in Environmental Data Gathering, Environmental Regulatory Review and Environmental Mitigation *Water Quality Report*

**Andrew Streng**, P.E., T.E., Associate Transportation Engineer, BS in Civil Engineering, Chico State University, 10 years experience in highway planning and traffic studies *Traffic Studies*

**Richard Sannar**, Associate Transportation Engineer. Certificate in Hazardous Waste Materials Management, U.C. Davis. 7 years experience in Hazardous Waste studies. *Hazardous Waste Assessment Oversight*

**Jennifer A. Malcolm**, B.S. Landscape Architecture. 9 years experience in Landscape Architecture *Visual Impact Assessment*

**Steven T. Reader**, Associate Landscape Architect M.L.A. Landscape Architecture, California State Polytechnic University at Pomona. 6 years experience as a Landscape Architect. *Visual Impact Assessment*

**Janis Offermann**, Associate Environmental Planner (Archaeology). M.A. in Anthropology. 15 years experience in California Archaeology. *Archaeological Survey*

**Daryl Noble**, Associate Environmental Planner, M.A. in Anthropology, 13 years experience in California Archaeology

**Bonnie (Parks) Snyder**, Associate Environmental Planner M.S. Historic Preservation, University of Oregon. 6 years experience in Architectural History. *Historic Architectural Survey*

#### **FEDERAL HIGHWAY ADMINISTRATION**

**Leland Dong**, Senior Transportation Engineer. *Project Oversight*

**Cesar Perez**, Transportation Engineer. *Project Oversight*

**Gary Sweeten**, Environmental Specialist, *Project Oversight*

#### **CONSULTANTS**

##### ***FAR WESTERN ANTHROPOLOGICAL RESEARCH***

**John Berg**, M.A. Anthropology, California State University, Sacramento. 8 years experience in California Archaeology. Consulting Archaeologist. *Archaeological Survey and Historic Property Survey Report*

**Kelly McGuire**, M.A. Anthropology, University of California, Davis. 20 years experience in California Archaeology Consulting Archaeologist. *Archaeological Survey and Historic Property Survey Report*

##### ***LSA & ASSOCIATES, INC.***

**Rick Harlacher**, M.S. Biology, California Polytechnic University, Pomona. Project Manager, *Biologist. Author of Natural Environment Study, Biological Assessment, Supplement to Biological Assessment. Conceptual Mitigation and Monitoring Plan*

**Jeffrey Bray**, B.S. Wildlife Biology, California State University, Humboldt. *Biologist, co-author of Natural Environment Study*

**Tony Chung**, PH.D. Mechanical Engineering, Engineering Degree in Mechanical Engineering, University of California, Los Angeles, M.S. Mechanical Engineering, University of Mississippi, Oxford, B.S. Mechanical Engineering, National Tsing-Hau University, Taiwan. *Air and Noise Studies, Air Quality Impact Report, Noise Impact Report*

***PSI, ASSOCIATES***

**Holly Gannaway**, B.A. Environmental Studies, University of Kansas, 5 years experience.

*Update to Initial Site Assessment for Hazardous Waste*

**Frank Poss, REA**, M.S. Geology, San Diego State University, B.A. Geology, University of California, Santa Barbara. 15 years experience. Senior Author. *Update to Initial Site*

*Assessment for Hazardous Waste*

***ENVIRONMENTAL ASSESSMENT***

**Norman Sacro, M.S. R.E.A.**, Project Director. *Initial Site Assessment for Hazardous Waste*



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## ACRONYMS

|                   |  |
|-------------------|--|
| <b>AADT</b>       | Average Annual Daily Traffic   |
| <b>AASHTO</b>     | American Association of State Highway and Transportation Officials   |
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| <b>NMFS</b>   | National Marine Fisheries Service                   |

|                 |   |
|-----------------|---|
| <b>NOI</b>      | Notice of Intent  |
| <b>NOx</b>      | Nitrogen Oxides   |
| <b>NPDES</b>    | National Pollutant Discharge Elimination System                           |
| <b>NRHP</b>     | National Register of Historic Places                                      |
| <b>NWP</b>      | Nationwide Permit   |
| <b>O3</b>       | Ozone   |
| <b>PA/SI</b>    | Preliminary Assessment/Site Investigation                                 |
| <b>Pb</b>       | Lead  |
| <b>PCB</b>      | Polychlorinated Biphenyl  |
| <b>PCE</b>      | Tetrachloroethene   |
| <b>PCM</b>      | Permanent Control Measures  |
| <b>PDT</b>      | Project Development Team  |
| <b>PM10</b>     | Particulate Matter with an Aerodynamic Diameter less than Ten Micrometers |
| <b>PM2.5</b>    | Particulate Matter with an Aerodynamic Diameter less than 2.5 Micrometers |
| <b>PPE</b>      | Personal Protective Equipment   |
| <b>ppm</b>      | Parts per Million   |
| <b>PS&amp;E</b> | Plans Specifications and Estimates  |
| <b>PSI</b>      | Preliminary Site Investigation  |
| <b>RCRA</b>     | Resource Conservation and Recovery Act                                    |
| <b>RMP</b>      | Regional Monitoring Program   |
| <b>ROD</b>      | Record of Decision  |
| <b>RTIP</b>     | Regional Transportation Improvement Program                               |
| <b>RTP</b>      | Regional Transportation Plan  |
| <b>RWQCB</b>    | Central Valley Regional Water Quality Control Board                       |
| <b>SARA</b>     | Superfund Amendments and Reauthorization Act                              |
| <b>SHPO</b>     | State Historic Preservation Officer                                       |
| <b>SIP</b>      | State Implementation Plan   |
| <b>SO2</b>      | Sulfur Dioxides   |
| <b>STIP</b>     | State Transportation Improvement Program                                  |
| <b>SVOC</b>     | Semi-Volatile Organic Compound  |
| <b>SWPPP</b>    | Storm Water Pollution Prevention Plan                                     |
| <b>TASAS</b>    | Traffic Accident Surveillance and Analysis System                         |
| <b>TIP</b>      | Transportation Improvement Program  |
| <b>TMP</b>      | Transportation Management Plan  |
| <b>TPH</b>      | Total Petroleum Hydrocarbons  |
| <b>TRPH</b>     | Total Recoverable Petroleum Hydrocarbons                                  |
| <b>TSCA</b>     | Toxic Substance Control Act   |
| <b>TSM</b>      | Transportation Systems Management   |

|              |                                |
|--------------|--------------------------------|
| <b>ug/L</b>  | Micrograms per Liter           |
| <b>ug/m3</b> | Micrograms per Cubic Meter     |
| <b>USACE</b> | U.S. Army Corps of Engineers   |
| <b>USC</b>   | United States Code             |
| <b>USCG</b>  | U.S. Coast Guard               |
| <b>USDA</b>  | U.S. Department of Agriculture |
| <b>USFWS</b> | U.S. Fish and Wildlife Service |
| <b>USGS</b>  | U.S. Geological Survey         |
| <b>UST</b>   | Underground Storage Tank       |
| <b>VOC</b>   | Volatile Organic Compound      |
| <b>WWTP</b>  | Wastewater Treatment Plant     |

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| <b>NES/BA</b> | Natural Environment Study and Biological Assessment |
| <b>NGVD</b>   | National Geodetic Vertical Datum                    |
| <b>NMFS</b>   | National Marine Fisheries Service                   |

|                 |   |
|-----------------|---|
| <b>NOI</b>      | Notice of Intent  |
| <b>NOx</b>      | Nitrogen Oxides   |
| <b>NPDES</b>    | National Pollutant Discharge Elimination System                           |
| <b>NRHP</b>     | National Register of Historic Places                                      |
| <b>NWP</b>      | Nationwide Permit   |
| <b>O3</b>       | Ozone   |
| <b>PA/SI</b>    | Preliminary Assessment/Site Investigation                                 |
| <b>Pb</b>       | Lead  |
| <b>PCB</b>      | Polychlorinated Biphenyl  |
| <b>PCE</b>      | Tetrachloroethene   |
| <b>PCM</b>      | Permanent Control Measures  |
| <b>PDT</b>      | Project Development Team  |
| <b>PM10</b>     | Particulate Matter with an Aerodynamic Diameter less than Ten Micrometers |
| <b>PM2.5</b>    | Particulate Matter with an Aerodynamic Diameter less than 2.5 Micrometers |
| <b>PPE</b>      | Personal Protective Equipment   |
| <b>ppm</b>      | Parts per Million   |
| <b>PS&amp;E</b> | Plans Specifications and Estimates  |
| <b>PSI</b>      | Preliminary Site Investigation  |
| <b>RCRA</b>     | Resource Conservation and Recovery Act                                    |
| <b>RMP</b>      | Regional Monitoring Program   |
| <b>ROD</b>      | Record of Decision  |
| <b>RTIP</b>     | Regional Transportation Improvement Program                               |
| <b>RTP</b>      | Regional Transportation Plan  |
| <b>RWQCB</b>    | Central Valley Regional Water Quality Control Board                       |
| <b>SARA</b>     | Superfund Amendments and Reauthorization Act                              |
| <b>SHPO</b>     | State Historic Preservation Officer                                       |
| <b>SIP</b>      | State Implementation Plan   |
| <b>SO2</b>      | Sulfur Dioxides   |
| <b>STIP</b>     | State Transportation Improvement Program                                  |
| <b>SVOC</b>     | Semi-Volatile Organic Compound  |
| <b>SWPPP</b>    | Storm Water Pollution Prevention Plan                                     |
| <b>TASAS</b>    | Traffic Accident Surveillance and Analysis System                         |
| <b>TIP</b>      | Transportation Improvement Program  |
| <b>TMP</b>      | Transportation Management Plan  |
| <b>TPH</b>      | Total Petroleum Hydrocarbons  |
| <b>TRPH</b>     | Total Recoverable Petroleum Hydrocarbons                                  |
| <b>TSCA</b>     | Toxic Substance Control Act   |
| <b>TSM</b>      | Transportation Systems Management   |



|              |                                |
|--------------|--------------------------------|
| <b>ug/L</b>  | Micrograms per Liter           |
| <b>ug/m3</b> | Micrograms per Cubic Meter     |
| <b>USACE</b> | U.S. Army Corps of Engineers   |
| <b>USC</b>   | United States Code             |
| <b>USCG</b>  | U.S. Coast Guard               |
| <b>USDA</b>  | U.S. Department of Agriculture |
| <b>USFWS</b> | U.S. Fish and Wildlife Service |
| <b>USGS</b>  | U.S. Geological Survey         |
| <b>UST</b>   | Underground Storage Tank       |
| <b>VOC</b>   | Volatile Organic Compound      |
| <b>WWTP</b>  | Wastewater Treatment Plant     |

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## GLOSSARY

**1602 Agreement** An agreement pursuant to Section 1602 of the California Fish and Game Code between the Department of Fish and Game and a public agency, designed to protect the fish and wildlife values of a lake or stream. It is required whenever a proposed activity will substantially divert or obstruct the natural flow or changes the bed, channel or bank of any river, stream or lake designated by the Department of Fish and Game. A 1602 Agreement is also required if any material from the streambeds is used.

**404 Permit** The Corps of Engineers requires this permit under Section 404 of the Clean Water Act for all projects that involve dredging or filling of lakes, streams, tidelands, marshes, or low-lying areas behind dikes or levees, as well as for disposal of dredged materials to any waterway or ocean.

**Anadromous** Migrating up rivers from the sea to breed in freshwater (*American Heritage Dictionary*, p. 106).

**base floodplain elevation (BFE)** The area subject to flooding by the base flood. The base flood is the flood or tide having a one percent chance of being exceeded in any given year (100 year flood).

**Basin Plan** A specific plan for control of water quality within one of the nine hydrologic basins of the State under the regulation of a Water Quality Control Board.

**Beneficial Use** A use of a natural water resource that enhances the social, economic, and environmental well-being of the user. Twenty-one beneficial uses are defined for the waters of California; they are listed and described below:

**Agricultural Supply (ARG)** – Includes crop, orchard, and pasture irrigation, stock watering support of vegetation for range grazing, and all uses in support of farming and ranching operations.

**Preservation of Areas of Special Biological Significance (BIOL)** – Such areas include marine life refuges, ecological or environmental reserves or preserves, areas where kelp propagation and maintenance require special protection, and formally designated Areas of Special Biological Significance.

**Cold Freshwater Habitat (COLD)** – Provides a cold water habitat to sustain aquatic resources associated with a cold water environment.

**Ocean Commercial and Non-Fresh Water Sportfishing (COMM)** – Includes the commercial collection of fish and shellfish, including those collected for bait, plus sportfishing in the oceans, bays, estuaries, and similar non-fresh water areas.

**Fresh Water Replenishment (FRSH)** – Provides a source of fresh water for replenishment of inland lakes and streams of varying salinity.

**Ground Water Recharge (GWR)** – Includes natural or artificial recharge for future extraction for beneficial uses and to maintain salt balance or halt saltwater intrusion into freshwater aquifers.

**Industrial Service Supply (IND)** – Includes uses which do not depend primarily on water quality, such as mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, and oil-well repressurization.

**Marine Habitat (MAR)** – Provides a water supply (and supports a vegetative habitat) for the maintenance of wildlife.

**Fish Migration (MIGR)** – Provides a migration route and temporary aquatic environment for anadromous or other fish species.

**Municipal and Domestic Supply (MUN)** – Includes usual uses in community or military water systems and domestic uses from individual water supply systems.

**Navigation (NAV)** – Includes commercial and naval shipping.

**Hydroelectric Power Generation (POW)** – Is that supply used for hydropower generation.

**Industrial Process Supply (PROC)** – Includes process water supply and all uses related to the manufacturing of products.

**Preservation of Rare and Endangered Species (RARE)** – Provides an aquatic habitat necessary, at least in part, for the survival of certain species established as being rare and endangered species.

**Water-Contact Recreation (REC 1)** – Includes all recreational uses involving actual body contact with water, such as swimming, wading, water-skiing, surfing, sport fishing, uses in therapeutic spas, and other uses where ingestion of water is reasonably possible.

**Non-Contact Water Recreation (REC 2)** – Covers recreational uses which involve the presence of water but do not require contact with water, such as picnicking, sunbathing, hiking, beachcombing, camping, pleasure boating, tidepool and marine life study, hunting, and aesthetic enjoyment in conjunction with the above activities as well as sightseeing.

**Saline Water Habitat (SAL)** – Provides an inland saline water habitat for aquatic and wildlife resources.

**Shellfish Harvesting (SHEL)** – The collection of shellfish such as clam, oysters, abalone, shrimp, crab, and lobster for sport or commercial purposes.

**Fish Spawning (SPWN)** – Provides a high-quality aquatic habitat especially suitable for fish spawning.

**Warm Freshwater Habitat (WARM)** – Provides a warm water habitat to sustain aquatic resources associated with a warm water environment.

**Wildlife Habitat (WILD)** – Provides a water supply and vegetative habitat for the maintenance of wildlife

**Best Management Practice (BMP)** Any program, technology, process, siting criteria, operating method, measure, or device that controls, prevents, removes, or reduces pollution.

**Bypass** An arterial highway that permits traffic to avoid all or part of a certain area such as an urban area or park.

**CNPS** California Native Plant Society. The California Native Plant Society produces an inventory of rare and endangered plants vascular plants of California. The inventory includes five lists which categorize the degree of concern for the plant, List 1A, 1B, 2, 3, and 4. Plants in List 1A, 1B and 2 are protected under Section 1901, Chapter 10 (Native Plant Protection Act) and Sections 2062 and 2067 of the California Endangered Species Act and are eligible for State listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA.

**Chemical Oxygen Demand (COD)** A monitoring test that measures all the oxidizable matter found in a runoff sample, a portion of which could deplete dissolved oxygen in receiving waters.

**Conventional Highway** A highway with no control of access (no control of access roads onto the highway) which may or may not be divided or have grade separations at interchanges.

**Cooperating Agency** (NEPA) A cooperating agency may be any other federal agency , other than the lead agency, that has jurisdiction by law or special expertise with respect to the environmental impacts expected to result from a proposal. (See also Responsible Agency)

**Controlled Access Highway** A freeway, as defined by statute, is a highway in which the owners of abutting lands have no right or easement of access to or from their abutting lands or where the adjacent landowners owners have only limited or restricted right or easement of access. A facility may be designated a "controlled access highway" in lieu of the designation "freeway".

**Cumulative Effects** The Council on Environmental Quality regulations for implementing the National Environmental Policy Act define cumulative effects as follows:

*The impact on the environment which results from the incremental impact of the action when added to other past, present and reasonable foreseeable future actions regardless of what agency (Federal or non-federal) or person undertakes such other actions (40 CFR 1508.7).*

**Design Speed** A speed selected to establish specific minimum geometric design elements for a particular section of highway

**Design Year** The future year used to estimate the probable traffic volume for which a highway is designed. A time, 10 to 20 years, from the start of construction is usually used.

**Detention Basin** A basin, usually surrounded by a dike or levee, which holds stormwater runoff until the receiving waters are low enough for the contained water to be discharged.

**Direct Effects [Impacts]** Direct effects are caused by the action and occur at the same time and place. (40 CFR. 1508.8(a)) (See also Indirect Effects)

**Discharge** Instantaneous rate of flow expressed in terms of volume per unit time.

**Draft EIR/EIS** Draft Environmental Impact Report (State), Environmental Impact Statement (Federal)

**Drainage Basin (drainage catchments)** The area in which all storm water will accumulate into one given stream.

**Ecosystem** The total dynamic complex of a community of organisms and its controlling environment functioning as a unit.

**Erosion** The wearing away of the land surface by running water, wind, ice, or other geological agents.

**Expressway** An arterial highway with at least partial control of access, where limits are placed on number and types of intersecting streets, roads and driveways. An expressway may or may not be divided or have separations at intersections

**Federal Register** A federal publication which provides official notice of federal administrative hearings and issuance of proposed and final federal administrative rules and regulations.

**Fishery** A stream capable of supporting angling activities. Usually streams which show evidence of spawning and nursery grounds.

**Freeway** A divided arterial highway with full control of access and with grade separations at intersections.

**Grade Separation** Utilized when two roads intersect at different grades (vertical planes). Normally provided as part of an interchange; in lieu of an at-grade intersection.

**ha** hectares (acres  $\times$  .40469 = hectares)

**Habitat** The place or type of site where a plant or animal naturally or normally lives and grows.

**Highway** A road without controlled access and may not necessarily have grade separations at intersections

**Hydric Soil** Soils that are saturated, flooded, or ponded long enough during the growing seasons to develop anaerobic conditions in the upper part (ACOE/EPA 1987 Manual).

**Indirect Effects** Indirect effects are caused by an action but occur later in time or are further removed in distance, but must be reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use; population density or growth rate; and related effects on air, water and other natural systems or ecosystems. (40 CFR 1508 (b))

**Intermittent Stream** A stream which flows only during part of the year, usually during wet weather.

**Kjeldahl Nitrogen** The total concentration of ammonia and organic nitrogen present, not including nitrates or nitrites.

**Leq** The equivalent steady-state sound level which in a stated period of time contains the same acoustic energy as the time-varying sound level during the same period.

**Leq(h)**...The hourly value of Leq

**Level of Service (LOS)** a measurement of the capacity of the roadway.

**Median**...The portion of a divided highway separating the traveled ways for traffic in

opposite directions.

**Mitigation**-actions or project design features that reduce impacts on cultural, socioeconomic or natural resources by:

- not taking a certain action or parts of action,
- minimizing impacts by limiting the degree or magnitude of the action or its implementation,
- rectifying the impact by repairing, rehabilitating or restoring the affected environment,
- compensating for the impact by replacing or providing substitute resources or environments, or
- reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.

**NOD** Notice of Determination, part of the CEQA process. It indicates that a project has been approved subject to the requirements of CEQA.

**NOP** Notice of Preparation, part of the CEQA process. Notice of intent to prepare an environmental impact report on a project.

**NOI** Notice of Intent, part of the NEPA process. A notice placed in the Federal Register to advise the public that an environmental impact statement will be prepared for a project.

**Nonpoint Source** A dispersed source of pollution that is not identifiable as to a specific location, but may be identified as contributing to water quality degradation from a tributary drainage area.

**NPDES Construction Permit** (National Pollutant Discharge Elimination System) – A permit regulated by the Regional Water Quality Control Board required if more than 2 ha (5 acres) of original ground is graded. One condition of this permit is that the contractor submit a Storm Water Pollution Prevention Plan (SWPPP), which is similar to the Water Pollution Control Plan required by Caltrans Standard Specification 7-1.01G.

**Parkway** An arterial highway for non-commercial traffic, with full or partial access control, and usually located within a park or ribbon of park like development.

**Perennial Stream** A stream with continuous year-round flow.

**pH** A measure of the hydrogen ion activity, which in dilute solution may be considered approximately equivalent to the hydrogen ion concentration.

**PM<sub>10</sub>** Particulate matter less than 10 microns in diameter.

**Point Source** A source of pollution waste water that is emitted at a singular location, usually a conduit or drainage channel, at which both flow and quality can be determined. Also a source of air pollution emitted at a singular location.

**Post Mile (P.M.)** A method of identifying a location on the State Highway System using miles. When combined with the county and route, identifies unique locations along any State Route in terms of miles.

**Project Development team (PDT)** A multi-disciplinary group of individuals who guide a project's development; usually composed of members of Caltrans, FHWA, cooperating

agencies, other agencies and the public.

**Project Report** A report providing programming project information that describes the project, its scope and limits, costs and delivery schedule.

**Responsible Agency** Responsible agency means a public agency, other than the Lead Agency, which has responsibility for carrying out or approving a project under CEQA.

**Retention Basin** A basin that holds stormwater runoff without release except by means of evaporation, infiltration or emergency bypass.

**Riparian Corridor** A delimited area of riparian (moist soil) substrate, within whose boundaries riparian vegetation may grow and support associated wildlife species.

**Riparian** Pertaining to the banks and other adjacent terrestrial (as opposed to aquatic) environs of freshwater bodies, watercourses, estuaries, and surface-emergent aquifers (springs, seeps, oases) whose transported freshwater provides soil moisture sufficient in excess of that otherwise available through local precipitation to potentially support the growth of mesic vegetation.

**ROD** Record of Decision. A federal decision document under NEPA that explains why an alternative has been selected, summarizes mitigation and summarizes efforts made to minimize environmental impacts.

**Route Concept** Most likely facility on the route given present and future financial, planning and engineering factors.

**Runoff** – The storm water which is not absorbed into the ground.

**Scoping**...An activity of the lead agency in the environmental review process that ensures the inclusion of: (1) all significant issues; and (2) maximum participation for the development of the EIS/EIR.

**Special Status Species** Plants and animals that are protected by State or Federal governments. Listed below are the designations:

#### **Federal**

**FPE** Proposed for federal endangered listing

**FE** Endangered - Taxa in danger of extinction throughout all or a significant portion of its range.

**FT** Threatened

**FPT** Proposed for federal threatened listing

**C** Candidate species taxa for which the Fish and Wildlife Service has sufficient biological information to support a proposal to list as endangered or threatened.

#### **State**

**SE** State Endangered - The prospects for survival and reproduction of the taxa are in immediate jeopardy from one or more causes.

**ST** State Threatened - Although not presently threatened with extinction, it is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts.

**SR** State Rare - Although not presently threatened with extinction, it is in such small numbers throughout its present range that it may become endangered if its present environment worsens (applied to plants only).



**CSC** California Species Of Special Concern. These species face immediate extirpation in California if current trends continue. Although they have no special legal status, these species are given management consideration whenever possible.

**California Native Plant Society (CNPS)**

**List 1B** Rare, threatened or endangered in California and elsewhere

**List 2** Rare, threatened or endangered in California but common elsewhere

**List 3** A review list, more information is needed

**List 4** A watch list, plants of limited distribution

**Stochastic** Involving or containing a random variable.

**Suspended Solids** The filterable fraction of the total solid present in water.

**Total Dissolved Solids** – The non-filterable fraction of the total solid present in water.

**Turbidity**- The measure of the resistance of water to the passage of light through it (Babbitt, Donald, p. 384).

**Urban**- An area is considered urban if it has a population of 5000 or more for Federal-Aid purposes.

**Waters of the United States** As defined by the ACOE in 33 CFR §328.3(a):

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide,
2. All interstate waters including interstate wetlands,
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce, including any such waters:
  - (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
  - (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
  - (iii) Which are used or could be used for industrial purposes by industries in interstate commerce,
4. All impoundment of waters otherwise defined as waters of the United States under this definition,
5. Tributaries of waters identified in paragraphs (1)-(4),
6. The territorial seas,
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1)-(6).

**Watershed** The drainage basin contributing water, organic matter, dissolved nutrients, and sediments to a stream, estuary, or lake.

**WET 2.0** Wetland Evaluation Technique, a methodology for the assessment of wetland

functions and values.

**Wetland** Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (33 CFR §328.3 (b)).

**Zone A** A floodplain determination where no base flood elevations have been determined.

**Zone AE** A floodplain determination where base flood elevations have been determined.